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Canoes are bailed dry and excess moisture is wiped out with wringers of coconut fiber. They are covered with old coconut-leaf mats (*pola*), unplaited dry coconut leaves, and pieces of pandanus matting. This canoe covering is termed *kaukau lama* or *tapola*. Coconut-leaf butts and lengths of timber are leaned against the covering to prevent its blowing away in the wind.

Formerly canoes were never anchored with a cable to prevent them from drifting. A stick, called *iki tawia*, was driven into the sand of the resting place of the canoe just forward of the stern cross boom on the port side of the canoe between the hull and the longitudinal spar. This served to anchor the canoe securely because the top end of the stick projected well above the cross boom.

Cultivation and Harvesting

The vegetable foods of the Pukapukans are limited to coconuts, talo, *pulaka*, bananas, and pandanus. Today a few papayas and limes grow on Motu Kotawa. Coconuts and talo were and are the staple vegetable foods; the coconut is immeasurably the more important. All parts of the coconut tree were used for food as well as clothing and sennit; its value led the people to study every phase in growth of fruit and tree. Any Pukapukan can distinguish stages in the growth of the nut by a glance at a tree, however high; and he will climb only that tree which has on it the particular fruit for his purpose.

Coconut

The origin of the coconut is told in the following Pukapukan version of a widespread Polynesian myth.

Mauieuli and Mauiepopo were a Pukapukan man and wife. Mauiepopo conceived a child by her husband and, as is the habit of women at this time and in this condition, she longed for special and strange foods to eat. She had tasted everything that her husband could bring her, but still she longed for other foods. Her husband fished and fished and brought her home his catch, but she refused to eat it, saying, "This fish smells rotten to me. Take it away. I do not like it. Go fishing again and bring me some other fish." So he went fishing again, and this time brought home some sweet fish, fat and delicious. But again his wife refused to eat, saying, "This fish is too sickly sweet. I don't like it." This went on for many days, the husband procuring all kinds of new fish, the wife refusing them all, until he was worn out with his toil, while his wife pined away for food. At last he said to her, "Tell me what kind of fish it is that you long for, and then I will try to bring it to you." She replied, "There is one fish only that I desire and that is a piece of the *tuna* eel."

The man got his bait and hooks and went to the hole of the *tuna*. He baited his hook and threw it into the hole, but the *tuna* would not bite. He tried many kinds of bait fish in turn but with no luck. At last in despair he tried a bait of flowers and leaves, but still the *tuna* would not bite his hook. In the end, when he was about to give up altogether, he thought of his wife sitting at home waiting for him and decided to make one more try. For this last effort he baited his hook with the strong-perfumed

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flower of the *welen* tree. As he baited his hook and dropped the line into the hole he made this chant: "Mauieuli, Mauiepopo, ta te matau, e matau lave" [Mauieuli, Mauiepopo, (we) prepare the hook, the fast-gripping hook]. The *tuna* took the bait and was soon fast fixed to the hook. The man hauled the fish from the hole, and when he was about to club it to death the fish spoke, saying, "Hear my words before you kill me. When I am dead, cut off my head. Let your wife eat my body, but my head you must plant in the ground in front of your house." The man listened well to the words of the *tuna*. Then he killed the fish, cut off its head, and planted it in front of his house. The body he wrapped in leaves, cooked in the oven, and took to his wife. She saw the eel and said, "Here you are at last with just the kind of fish I have been longing for." With these words she ate the fish and was satisfied.

After a time the head grew up into a tree which later bore nuts, one nut on the topmost stem, two nuts on the second stem, three nuts on the third stem, and so on up to ten nuts on the tenth stem. Then later it had twenty stems and on the twentieth were twenty nuts. Finally the tree bore a heavy crop of nuts. As the earliest nuts ripened and became hard, they dropped from the tree to the ground. Mauieuli collected all the nuts. Then he had the idea of giving nuts to all the islands in the Pacific. He divided the nuts into two parts; one part for the islands of the western Pacific, the other part for the islands of the eastern Pacific. Then he took one nut at a time from the western pile and threw it into the air. As he threw he called out the name of an island and there the nut landed. When the western pile was finished he started on the eastern pile, throwing a nut into the air as before for each island in the eastern Pacific. In this way all the islands of the Pacific received the coconut. After he had used all the nuts from the tree, he thought, "In this division I have forgotten all about Pukapuka, which is neither east nor west. Te Ulu-o-te-watu has received no nuts from this division." He looked around on the ground and found one very small, dry nut. He held up this nut and said, "This shall be the nut for Pukapuka." Thus in the end all the islands shared in the nuts from the tree that grew from the head of the *tuna* fished by Mauieuli.

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After telling this story, informants added that the first nut was planted in the reserve of Uta. It is a characteristic Pukapukan touch to say that Pukapuka received only a wizened nut after almost being left out of the division altogether. In the story of Lata, when Lata divided the huge *Tridacna* shellfish (*payua*), he forgot Pukapuka in the division and was able to give the island only the rock to which the *payua* was growing. Similarly Pukapuka was the last Polynesian island to receive Christianity and among the last islands to receive a visit from anthropologists!

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Coconut trees are empirically divided into 17 classes in terms of the bearing qualities of the tree and the shape or quality of the husk:

Niu lakita: produces nuts that are small but abundant; it sometimes ceases bearing for a long time but usually bears again after this pause.
Niu wata: bears well and continuously but not abundantly.
Niu tauiti: does not bear well and is not often planted.
Niu koalia: bears well but the nuts show a tendency to fall from the tree before they are mature.
Niu wuakole: a non-bearing tree with male flowers.
Niu malie: bears well and has good eating nuts.
Niu mangalo: bears the sweet eating coconut with edible husk.
Niu lalilliki: bears very small nuts.
Niu lanumui: very large nuts.
Niu kawa loloa: nuts with long husks.

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TIEBEAM HOUSE

The tiebeam house with paired side supporting posts, wall and roof plates is termed *wale wakayamoa* (fig.8,*b*). Though similar to the Rakahangan and Samoan tiebeam houses (29, pp. 70-75; 27, pp. 15 ff.), the Pukapukan house customarily has no kingpost, its principal rafters cross below the ridgepole, and there is no set of wall posts other than the main series of paired wall posts which support the wall plates, tiebeams, and roof plates. For this reason I have retained the term "wall plate" for the longitudinal beam that rests on the wall posts, but this wall plate functions in the same manner as the tiebeam plate of the Samoan house. It is likely that the Pukapukan name for the type house, *wale wakayamoa*, is derived from its similarities to the Samoan house of this style.

This house type is used for dwelling and cook houses in both village and copra settlements. When the tiebeams are covered with a platform (*papanga*), on which coconuts at the *takataka* stage are stored, the house is termed *wale takataka*, a name sometimes given as the type name of the house. The *wale wakayamoa* is also constructed in the reserves as a watch house for the guards. On the outskirts of the villages rough structures of this type are used as shelters for disassembled canoe sections.

In the typical house of this style, two wall posts on either side, grooved at the upper end, support wall plates which rest unlashed in the grooves. Four tiebeams (*aka*) rest on these wall plates and project 18 inches beyond the wall plates to which they are lashed. Resting against the outer ends of each tiebeam are thin poles which serve as supports for the coconut-leaf wall sheets (*takapau*). Roof plates (*kaukau lua*) are placed longitudinally on top of, and at the outer extremities of, the tiebeams. Twelve rafters (*uuti poto*) run from roof plate to ridgepole on either side of the house. They are lashed to both roof plate and ridgepole and cross above the ridgepole to support the thatch ridgepole (*tua lua*). An eaves purlin (*tahilihili*) and a second purlin (*talavu*) midway between roof plate and ridgepole are lashed to the inside of the rafters on each side of the house. The roof plate seems to function here as a third purlin, and some informants gave *talavu* as the name for both purlin and roof plate. On the two outer tiebeams at each end of the house are lashed, longitudinally, thin split sections of pandanus wood. They form end platforms for the storage of mats and household goods. They project beyond the outer tiebeam at each end to support an end purlin (*talavu tala lavu*). The end rafters are lashed to this purlin and to an end eaves purlin. On one side of the roof framework, a diagonal strut (*yoka*) runs on the inside of the rafters from the ridgepole at the point where the first rafter joins the ridgepole, down to the roof plate at the point where the tenth rafter joins the roof plate. The strut is lashed to ridgepole, intermediate rafters, and roof plate. On the opposite side of the house, the strut runs from the ridgepole at the tenth rafter to the roof plate at the first rafter. In other houses of the *wakayamoa* type, two braces are used on each side. The braces run diagonally from the roof plate in the center upward to each end of the ridgepole. The type house has no other ridgepole support than rafters and struts, but in one house observed, a rough kingpost ran from the second tiebeam in from the end and supported a ridgepole. The kingpost, also called *yoka*, was of rough wood, undressed, and obviously a novel addition to the roof framework. It was lashed neither to tiebeam nor ridgepole.

Each gable end of the type house is made by running eight end rafters (*uuti poto*

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tolo leuw) from the end eaves purlin (which is itself lashed at each end to the side eaves purlins) to the end side rafters. Four end rafters run to the left side rafter, four to the right side rafter. The end rafters are of varying length depending on their distance from the highest point of the ridgepole. Another end purlin, midway between eaves purlin and ridgepole supports the end rafters on the inside. A variation may sometimes be introduced into the gable end of both the *wakayamoa* and the *wale atua* house types, by using for the end purlin a piece of timber that has a slight, natural curve in the horizontal plane. The end rafters would be made of suitable length to retain the natural curve of the purlin. In small houses of the *wakayamoa* type, where the end purlin was of small diameter, it was sometimes bent into an artificial curve through binding the two ends of the purlin to the ends of the two outermost side principal rafters and through graduating the length of the end rafters in such a way that when lashed to the purlin, they thrust it out in a slight horizontal curve. There are no side or end thatch rafters on the type house. The coconut roof sheets are fastened directly to the principal rafters, the midribs of the sheets functioning as thatch rafters.

Lashing

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The lashing used for all parts of the house framework is of one pattern only, that of alternating curves, termed *yimu makawiwi*. The lashing corresponds to the curved pattern lashing described by Buck (29, p. 72, fig. 5)

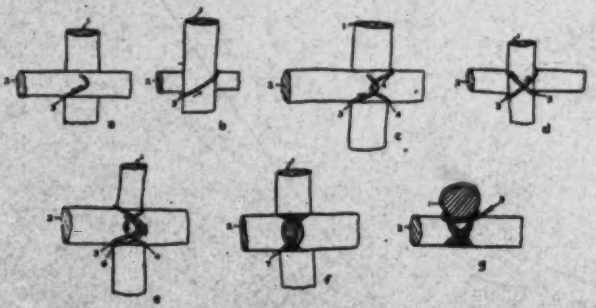

FIGURE 9.—Alternating curves lashing, used for principal parts of house framework; lashing shown for fastening together tiebeam (1) and wall plate (2). *a*, view from above: sennit braid laid on wall plate and held with thumb; free end makes curved turn on under side of wall plate (3). *b*, view from below: free end makes transverse turn across tiebeam. *c*, view from above: sennit braid (4) brought across commencement end, thumb holds crossing cords in place while braid makes curved turn across and down at wall plate (4). *d*, view from below: braid (5) makes transverse turn across and up tiebeam to curve around wall plate. *e*, view from above: braid (6) curves to right across second curve (4) and locks preceding two curves in place; thumb then removed and rough sennit does not slip. *f*, view from above: repetition of two curved turns successively applied on outer side of previous turns produces pattern (7); number of lashings varies according to elements, average number being 5 curves on either side, 10 in all. *g*, side view: crossings of turns and half of one design; braid (3) makes number of horizontal circumferential turns around lashing turns between two wooden elements; end of braid fixed by half hitches around last loops. (Diagram adapted from Buck, 29, fig. 5, p. 72.)

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for a type Rakahangan house, save that the Pukapukan commencement differs slightly from the Rakahangan technique. The Pukapukan lashing is shown in figure 9. This lashing is extremely common in Pukapuka on both houses and canoes, and is the only lashing used when it is necessary to fasten together securely two crossing elements.

Thatching

All houses in former days were thatched (*ato*) with coconut roof sheets (*pola launiu*). The method of plaiting the double coconut sheet is that described by Buck (26, pp. 7-11, figs. 6-10) for Aitutaki. Before being made into roof sheets the coconut leaf midribs are soaked in salt water for a few hours to free them of insects. The roof sheets are attached to the rafters by a continuous two-ply twisted sennit cord (*uka*); the method of passing the cord through the sheets from the inside of the house and back from the outside is that described for Aitutaki (26, pp. 19-21, figs. 23-25). A special thatching needle (*yuhi*) is used in Pukapuka, however, to facilitate this work. Two methods are distinguished by which the sheets may be applied to the rafters:

In one method (*ato yinahi lau*), the sheet midribs are all of the same length. They are applied in courses running from eaves to ridgepole, the midribs about one inch apart, contiguous courses overlapping. In the second method (*ato tele*) some roof sheets are made with short, some with long, midribs. Long midribs (*ui pola*) alternate in each course with short midribs (*pu pola*) and the sections running from eaves to ridgepole are not defined as in the *ato yinahi lau* method. The *ato tele* method of applying the sheets is more laborious than the *ato yinahi* method, but a well-thatched roof of this type is more nearly waterproof and lasts up to 10 years, whereas an *ato yinahi* roof, though more easily and quickly applied, rarely lasts longer than four to five years.

In thatching a roof section, a long doubled sheet (*pola wawati*) is placed on the rafters above the eaves. A long sheet is placed on top of this and the lashing to the rafters commences. Short sheets alternate with long sheets. As the thatching advances up the side of the roof, a worker lifts up the roof sheets to those who are lashing from the inside by skewering them with a lifting pole (*tuku pola*), which has the customary shoulder point. In both methods of thatching it is arranged that the last sheet to be applied to the sides is a long one. On top of this and overlapping the ridgepole break (*ati*) between the thatchings of the two sides is placed another sheet (*pola ati*), covered by still another sheet (*pola taupoto*). Over all is placed a coconut ridging mat (*tahapau taupoto*), made of two split half leaves and one whole leaf as described for Aitutaki (26, pp. 24-28, figs. 28-34). The gable ends are thatched in the same manner, starting from the double sheet at the eaves and working up to the ridgepole. The sheets are shortened as the thatching comes close to the ridgepole. At the top a small space is usually left for ventilation, and at the sides the edges of end sheets are often wedged in between the sheets that form the side thatching. Some leave the overhanging sheets at the eaves ragged and irregular, but others carefully trim the eaves edge of the sheets in an even line (*hotihoti te tulotulu wale*).

When heavy winds are expected, the thatching of coconut-leaf sheets is reenforced by knotting together the tip ends of two coconut midribs, which are then slung over the roof thatching in such a way that one midrib falls

l:Beaglehole and Beaglehole E-5 (1934-5)1938 Pukapukans

on one side of the roof, the other midrib on the other side. Where the roof is low, leaflets at the butt end of each midrib are carried under the eaves and tied to a thatch rafter. Where the roof is high, the weight of the midribs is sufficient to hold down the roof securely. A number of these double midrib slings are placed at intervals along the roof for added protection.

House thatching with pandanus leaves was introduced into Pukapuka by missionaries from Rarotonga. The method in use conforms in every particular to the Aitutaki method (26, pp. 11-24):

> Pandanus leaves are collected in the reserves, and straightened (*uve launvala* or *payalo launvala*) by passing them around an upright stick (*lakau uve launvala*). The leaves are then fastened in bundles (*pohai launvala*) by placing the tip end of each leaf over the butt end and tying the ends of a number of leaves together. The leaves are bent over and sewn to strips of wood split from the aerial roots of the pandanus. A sewing needle (*tui*) is used to split the longitudinal grain of the pandanus leaves so that the coconut leaf midribs (*tuania*) may be inserted to keep the leaves in position on the wooden strip. The completed roof sheet is termed *pola launvala*.

Framework Construction

Pandanus wood is used almost exclusively in the framework of the *wakayamoa* type house. Formerly the wall posts were buried about 12 inches in the ground, but in a modern house of this type, four ground posts are supported on low, grooved coral stones and the wall posts are fitted to these ground posts by mortise and tenon joints. In the modern house the tendency is also to fit together tiebeams, wall and roof plates with mortise and tenon joints, but in the old house this would have required much labor with shell adzes. Hence only the tops of the wall posts were grooved (*wakaulu pou*) to receive the wall plates, the heads of the rafters chipped out (*wakatala*) to fit against the ridgepole, and roof plates grooved (*wakakanu*) to fit against the tiebeams. If it is necessary to leave a house framework unthatched for several days all the principal posts are wrapped with coconut-leaf mats (*takapau*), and rafters are covered with a few coconut midribs, to protect the timbers from rotting or warping in sun or rain.

Wall Mats

In old houses of the *wakayamoa* type, walls are made with coconut-leaf mats (*takapau*). Mats are made long enough to overlap two wall poles, the depth of plaiting for each mat being about 12 inches. In a typical house, four mats form a set between each pair of wall poles. The mats are supported at their upper, midrib edges by two or three sennit cords spaced equidistantly between the two edges. The method of support is the same as the Samoan method (27, pp. 73-74, fig. 79). The mats operate on a Vene-

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285 352 Sleeping and floor mats are made of all three pandanus materials in various sizes for children and adults. The name of the material is added to the general name for a mat (*panga*) to distinguish the various types. Pukapukan mats in Bishop Museum are:

Name	Specimen Number	Material	Size	Wefts to Inch	Use
Panga laupua	C8070	lauwilu	3'5" square	6	Crawling mat for child
Panga lauwilu ava	C8071	lauwilu	1'11" × 1'6"	5	Mat on which newborn infant is laid
Epaepa	C8074	lauwilu	5' × 6'6"	5	Durable undermat for sleeping
Panga lito	C8114	lito	5'3" × 4'7"	5	Floor mat
Panga lito	C8122	lito	5'8" × 3'7"	5	Floor mat
Panga lauwala pakapaka	C8123	lauwala pakapaka	4'10" × 4'	3	Coarse foundation mat placed under epaepa for sleeping
Panga kanoni (mixed) lauwilu ma lito	C8166	lauwilu and lito	5'1" × 3'3"	6	Durable sleeping mat
Panga kie wete	C8121	kie wete	5'4" × 4'	6	Soft mat used to cover body when sleeping

285 171 All the above mats have the exposed sinistral finish described by Buck (27, fig. 118,*a*), except the last which presents two interesting variations in the fundamental plaiting technique:

> It is made of single elements to obtain a soft surface, but in order to bind the edges securely, the Samoan fine mat technique of a five-weft braid finish is used in defining the lower border. The commencement edge on the reverse side of the mat follows the method described by Buck (27, fig.161) and the continuation is the turned back fringe described by Buck (27, fig. 162 right). In the Pukapukan mat the dropped sinistrals are cut off flush with the lower border. The upper, finishing edge follows the Samoan method (27, figs.163,164) with the exceptions that the Pukapukan mat has a five-weft braid finish; the fringe ends produced by the projecting sinistrals and dextrals are cut off flush with the border; the right upper corner is not braided into a tail but the last three working dextrals are roughly interlocked by carrying the third working dextral from the end over the corner of the mat and pushing it under one sinistral, then with a forward turn, pushing it under two dextrals and cutting the ends off flush with the edge. The last two working dextrals from the end are turned back at the edge and pushed underneath the third dextral where it passes to the other side of the mat.

285 531 All the mats have overlaid or through and through designs of the customary red-dyed pandanus material. Most of the designs are old but several are obviously modern, for example the turtle (*wonu*) and the house side (*talawale*) designs. The mats are more heavily laden with design than is usual because the plaiters felt that many designs were appropriate for what they knew would be museum pieces.

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either end. A hollow cylinder was made and stuffed with banana leaves (*lau waiti*) or coconut husk fiber (*lau hanu*). The technique by which this pillow was made has been forgotten, for no woman professed herself able to make the article. Yielding to my suggestion that someone experiment, two pillows were made, but neither conforms to informants' description.

Pillow CB182 has a four-cornered cover 13¾ inches long, 6 inches wide and 2½ inches thick. It is plaited in single element check of *lito* material. Wefts 3 to the inch. The technique is that of ordinary mat plaiting, plaited in the modern way around a wooden block. The oblong cover is stuffed with coconut fiber and closed by passing finishing wefts under adjacent plaited elements.

Pillow CB183 is also four-cornered, 11 inches long, 5 inches deep, and 2½ inches thick. It is plaited in single element check of mixed *loomala pukapuka* and *lito*. Wefts 2 to the inch. The cover is stuffed with banana leaves.

Hats of European style are made of pandanus materials or prepared coconut fiber. They are of the Panama type, either plain or decorated by change of plaiting stroke or by overlaid strips of red-dyed materials. They are worn as protection against sun and as part of the church-going costume. No head covering or eyeshade of pandanus or coconut leaf was made in former times.

Coconut-leaf Articles

MATS AND SHEETS

The technique of making the Pukapukan coconut roof sheets, roof ridging sheets, and wall screens follows exactly the Samoan technique (27, pp. 169, 174, 176; cf. 26, pp. 7, 24).

Pukapukan coconut leaf mats in Bernice P. Bishop Museum are described in the list given on page 136.

BASKETS

Plaited coconut baskets (generic name, *ola*) are made with two different commencements—the twisted, two-strip commencement (29, p. 107, fig. 25) and the Pukapukan turned-back, two-strip commencement.

In the twisted two-strip commencement, the leaflets of each strip, following their natural direction, are twisted over the leaflets immediately in front. Two strips carrying leaflets are placed together, the sinistral-bearing strip above the other strip. To make the plaiting close and neat, one or more extra leaflets are added as extra wefts by placing the butt end between two midrib strips forming the commencement. This is the two-strip commencement with extra wefts which corresponds to the Tongarevan technique (28, pp. 127,133, figs. 14,17). The plaiting of the body of the baskets is in twill. At the bottom are a few rows of check, the size of the basket being made smaller by superimposing two alternate dextrals or two alternate sinistrals and plaiting the two elements as a single element. The baskets are finished with a braid.

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Baskets made with the Pukapukan turned-back, two-strip commencement (fig. 15,*a*,*b*,*c*) are called generically *kete*. They are used for transporting talo corms, coconuts, crabs, and the like. Small baskets with one or two points are sometimes used to hold talo pudding (*olo*), but they are generally used as shellfish and crabbing baskets. The plaiting technique is the same as for the Manihiki *pite* pointed receptacles (29, p. 117, fig. 33).

Pukapukan baskets in Bernice P. Bishop Museum are described in the list (pp. 138-139):

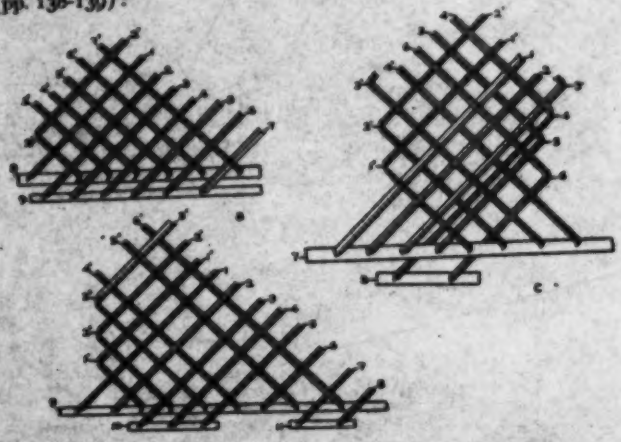

FIGURE 15.—Coconut-leaf mat. *a*, turned-back two-strip commencement: midrib strip (8) with leaflets naturally directed toward right; leaving out first leaflet (1), remaining leaflets on strip turn back to function as sinistrals (2′, 3′, 4′, 5′, 6′, 7′); sinistrals engage with naturally inclined leaflets of second strip (9) which function as natural dextrals (2, 3, 4, 5, 6, 7). *b*, discontinuous two-strip commencement: lower continuous leaflet strip (9) carries leaflets naturally directed toward right; leaving out dextral leaflets 1 and 2, leaflets 1′, 2′, 3′, 4′ are turned back to function as sinistrals, engaging with naturally inclined dextral leaflets (3, 4, 5) carried by second strip (10); leaflet 6, of first strip (9) keeps its natural direction and acts as a dextral; the next two leaflets of this strip (5′, 6′) bend back to act as sinistrals engaging previous dextrals; leaflets (7, 8) of third strip (11) act as natural dextrals and will engage with turned-back sinistrals of first strip; course of plaiting continued by additional strips and turning back of naturally inclined leaflets to left to act as sinistrals. *c*, variation of turned-back two-strip commencement: midrib strip (7) carries eight leaflets naturally inclined to right; to establish stroke four leaflets (1, 2, 3, 5) function as natural dextrals; they engage in plaiting stroke remaining four leaflets on strip which are bent back to act as sinistrals (1′, 2′, 3′, 4′); additional strip (8), carrying two natural dextrals (4, 6), placed under first strip (7), and two extra dextrals engage with turned-back sinistrals of first, or upper strip (7); when stroke has been established, edges are formed by giving a half turn to sinistrals at left edge so that free sinistrals are converted back into functioning dextrals; for right edge, free dextrals given a half turn to left and continue to function as sinistrals in plaiting.

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ment end, and passes at 6, on near side, diagonally up to shoulder (3) where it grips poll of adz, passes across far side of heel, and is brought to near side over notch 1, across to toe angle; it makes a turn under toe angle, passes to notch 1, on far side, and then across heel on near side, gripping first diagonal turn (7) of sennit from toe to heel. *b*, continuation of lashing: free end (7) passes across shoulder (3) and across heel to notch 1, where it is brought across to near side and down (8) to near side toe angle; from toe angle it passes to far side of toe and makes a transverse turn around toe, coming back on near side and passing under toe angle (9) to make diagonal turn on far side up to shoulder; brought around shoulder to near side and passes across heel (10) to notch 1, where it passes down far side of heel to make further turns, as described, until four complete turns are made of which, for clearness, only two are shown in *b*. *c*, lashing of point of heel: fourth completed turn brings free end of sennit into position at 11, to make two turns around point of heel; sennit passes diagonally across near side of foot from toe angle to heel, crosses to far side of heel at notch 2, passes across heel and is brought to near side of heel (12) and diagonally down on near side to toe angle; sennit crosses under toe again (13), runs diagonally up to heel on far side and is brought across notch 2, to near side of heel, then across heel and diagonally down on far side to toe angle (14); sennit then ready to make two more turns, repeating diagonal movements between toe angle and heel; four diagonal turns in all, of which only two are shown in *c*. *d*, continuation of lashing: last turn of diagonal lashing brings sennit into position (15) for further turns; sennit passes on near side from toe angle to notch 1, where it lies on top of turns made as in *b*; sennit crosses to far side of heel, then crosses heel to shoulder (3) and goes around to near side of heel and across heel to notch 1 where it passes to far side of heel and down to toe angle (17), forming lower loop (16) of this phase of lashing. *e*, sennit (17) comes around under toe angle and goes diagonally across to heel; turn continued around heel to far side to make upper loop (18), then diagonally down on far side to toe angle; this brings sennit (19) into position to repeat turns as in *d* and *e*; altogether six turns are made, lower loop alternating with upper loop, and free finishing end of sennit brought up on near side of toe angle and buried underneath last two turns at heel angle. *f*, completed lashing: 20, first four turns made around toe, binding lower part of adz to toe of haft; 21, four diagonal turns around point of heel and notch 2; 22, final six turns, alternating lower with upper loop; 23, point where end is buried to complete lashing.

Drill

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The pump drill (*wou*) was formerly used to drill holes in wood and shell. It was of a common Polynesian design (fig.22).

To drill a small hole or to drill fragile articles, a light balance was required; for this purpose one half of a dry coconut shell was put on the shaft by pushing the shaft through the soft eye of the shell, the eye part of the shell pointing downward, the open half of the shell pointing upward. To drill a large hole in hard material, a heavy balance was used, the wooden balance on a drill being reenforced if necessary with extra weights of wood.

The point of the drill was of shell or iron. Informants were at pains to point out that the Pukapukans were aware of iron long before white contact. They procured nails from pieces of boat wreckage which from time immemorial have drifted onto the outer beaches. They burned the wreckage and combed over the ashes for nails hammered into the wood.

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To drill is also *wou*. The worker started a hole by holding the shaft of the drill between the palms of the hands and rotating it. When he had made the slightest depression to hold the point, he worked the drill with the pump handle.

1:Beaglehole and Beaglehole E-5 (1934-5)1938 Pukapukans

An extra sail support is needed with the gaff sail (fig. 32). This sprit is termed *toko*. At the lower end it rests in a snotter (*wakamounga no te toko*) fastened to the mast. In a strong wind blowing directly aft, the gaff sail is supported by a further stay that runs from the head of the sprit to the stern cross lifting bar, occasionally to the curve of the stern piece around which it is fastened.

For a one-man canoe for sailing to the islets, a rough-and-ready sail is made from a coconut-leaf mat (*takapou*). A pole is stepped in the canoe and lashed to the forward cross boom. The midrib side of the mat is fastened to the pole with sheets of coconut fiber (*kaisen*) and the outer edges of the mat stayed by guys passing to the hand of the sailor who sits in the stern of the canoe and steers. A *takapou* mat catches ample wind to speed along a small canoe.

The mast of any Pukapukan canoe is mounted at either end of the canoe, the outrigger being invariably kept to windward. The canoe can not tack without unshipping the mast and setting it up at the other end of the canoe. Sailing fast (*kalali* or *polo*) in a heavy wind, some members of the crew rest their weight on the outrigger cross booms in order to counterbalance any tendency of the outrigger to lift out of the water. Under sail a Pukapukan canoe lies close to the wind, but tends to make rapid leeway for want of a keel.

Paddle and Bailer

The Pukapukan paddle (*uoe*, fig. 26*d*) has a projecting knob (*mata*) at the distal end of the blade. This knob has a dual function. It protects the blade (*lousiau uoe*) when the canoe is being poled over lagoon shallows, and, when the paddle is brought from the water with a sharp wrench after a short jab stroke, the knob makes, in contact with the water, a short, sharp, ringing sound (*koo tangi te uoe*), used to attract fish to the fishing canoes. It is a very characteristic sound in Pukapukan paddling, and whenever it is necessary to imitate a canoe in May Day play festivals, a file of men walk about making this sound with their lips, at the same time raising and lowering their arms.

The paddle is used on both port and starboard sides of the canoe. The outrigger does not offer great impediment to the typical short, jabbing strokes of the Pukapukan paddler. Any paddle is used indifferently for steering and paddling. Formerly the paddle was always held with the back (*tua*) turned toward the rear of the canoe. This usage (*alo tua*) is reserved today for short spurts and for making the paddle resound, the front (*alosio* or *vakevake*) of the paddle being now customarily directed toward the rear.

Each canoe has as part of its equipment a long pole (*toka*) used for poling the canoe over reef shallows. Some canoes returning to Wale from Motu Ko hug the reef circuit and make good speed with two people poling, one in the bow and one in the stern.

The bailer (*tata*, fig. 26*g*) is of common Polynesian type. It is not decorated with carving. In use, the bailer is not filled, lifted, and emptied over the side of the canoe, but water is gathered from the bottom of the hull and shot out with one vigorous and continuous scoop. In small canoes, an empty coconut shell serves as a bailer.

Measurements

The principal measurements of seven Pukapukan canoes are given in Table 3. These measurements may be compared with those of the 13-seater canoe shown in figure 25.

The amount by which the forward end of the outrigger float is set to starboard to assist the steering qualities of the canoe ranges in the canoes measured from 2 to 6 inches, with an average of about 3½ inches. Pukapukan canoe builders gave no rule

1:Beaglehole and Beaglehole E-5 (1934-5)1938 Pukapukans

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proper (p. 188). It is lashed to the hook with fine two-ply twisted *unu*. The hackle is made of short lengths (1 to 1½ inches) of *unu* cord; the number of separate lengths ranges from 10, if of fine cord, to 28 lengths if of fine thread. Pukapukan fishermen have never used hackles of any material other than *unu*.

FIGURE 42.—Bonito hook points (*manga*). *a*, common shape, rounded back, point almost parallel with base line; *b*, another common point, similar to *a*, but with longer point base; *c*, point with square back, acute angle at top right edge of base; *d*, short functional point and base, wide bend; *e*, point with well-rounded bend, downward projecting functional point. 1, functional point; 2, bend; 3, base; 4, distal hole (*pu hi mua*); 5, proximal hole (*pu hi mua*).

No ceremonial is associated with the lashing together of the parts of the bonito hook. Considerable variation exists in lashing methods employed. Some fishermen employ separate lashings for the proximal and distal point holes in fastening point to shank, others employ a continuous lashing. The lashing of shank head to snood is also variable; some lashings consist of simple transverse turns, others of transverse and figure-of-eight turns.

A single hole lashing commences at the proximal hole with the middle of a long piece of thread. One end of the thread is left free to make the snood seizings, the other end is used to make transverse turns through the proximal hole of the point and round the shank. On the back of the shank, these turns make oblique crossings (*wahawiwi*). On one hook only are the crossings parallel and not oblique. After six or eight transverse turns are made, they are bound on one side with the finishing end of the thread and fastened with overhand knots. On the other side, the free commencement end also binds the turns and is knotted, but the free end is passed backward and forward between the head hole and the proximal hole of the point for two or three turns and laid aside.

The snood is now laid on the front of the shank. One end of the snood is passed through the proximal hole of the point and doubled back along its length for the whole or part of the distance between point hole and head hole. The free end of the proximal hole lashing which has just made the turns between point hole and head hole is now seized round both the doubled snood and its previous turns through head hole with close turns. The point-head hole turns may be left out of the seizing for a few turns and then caught up again, or they may be continuously included in the seizing turns. In any case, toward the head, the point-head hole turns are dropped from the seizing which is continued to a point above the head hole. Most snood-head hole lashings consist of transverse turns between the hole and the snood followed by figure-of-eight turns over the snood, corresponding to the Manihiki method (29, p. 183, fig. 97).

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With a separate length of thread transverse turns are made through the distal hole and round the tail of the shank, fixing the hackle in this lashing with oblique turns according to the Manihiki method (29, p. 179, fig. 91), with the exception, however, that the lashing thread, after making about ten oblique transverse turns, makes half hitch side bindings round the near side lashing of the distal hole. The free end of the thread is passed through the distal hole to the far side, again makes half hitch side bindings round the far side lashing. The free end is then brought back round the distal end of the point, passed under the near side lashing, up, back over it to make a distal point

1:Beaglehole and Beaglehole E-5 (1934-5)1938 Pukapukans

227 loop, and is finally fastened with overhand knots to this distal point loop. This loop
264 is stretched and knotted on itself with an overhand knot. The loop is cut below the knot and each end knotted again to prevent unravelling. This method of making the secondary hackle was the one illustrated to me, but it is possible that the Samoan method (27, p. 300) is also employed.

[171] If the base of the point is narrow and the point, after lashing, appears to be loose, filler sticks, ranging from 1 to 2¼ inches long, are inserted between the point base and the point-shank lashings to fill this space and tighten up the point. They are used in 17 hooks, absent in 11 hooks.

Variations on type hook. The previous description summarizes the type bonito hook. Variations, especially in lashings, are common.

Continuous lashing of the two point holes to the shank is done with a very long lashing thread. The worker measures this into three sections. Commencing with the middle section, he lashes the proximal hole with transverse, oblique turns, binds this lashing with half hitches and passes one end of the thread up to the head hole. The head hole-point turns may be simple turns passing from the near side proximal point hole to the near side head hole, through the head hole and back to the far side point hole, or they may be oblique figure-of-eight turns, passing from the near side point hole to the far side head hole, through this hole and back to the far side point hole. In either case, after finally passing through the point hole, the seizing of the head hole-point turns continues as before. When the lashing of the snood to the head is completed, the free end of the third section of lashing thread is passed along the base of the point to the distal hole and completes the distal hole lashing, hackle fixation, and secondary hackle as before. Alternately, in one hook, the free end passes through the proximal hole, to the far side, makes a half hitch side binding, then passes back to the near side distal hole between the base of the point and the front of the shank.

The turns between head hole and point in one hook are made by passing the lashing thread from the near side proximal hole of the point up to the head hole, down to the point again, round the far side proximal hole lashing at the side of the point base, up to the head hole, through this, down the near side and round the near side proximal hole lashing. This is continued for the customary three turns and the free end continues with the snood seizing. In yet another hook, the turns between head hole and point have been added after the snood was lashed to the head and instead of passing through the head hole, pass round the head snood lashing between the snood and the head of the shank. The third downward turn on the near side passes obliquely underneath the snood to the far side proximal hole and through this hole to the near side to complete the lashing.

Several hooks have a simpler lashing of snood to the head of the shank. The thread makes transverse turns through the head hole and over the snood, binding these turns with circumferential turns between the head of the shank and the snood. This lashing corresponds to the simple Manihiki technique (29, p. 183, fig. 96).

[171] Most side bindings of point lashings are made with the regular lashing thread. In one hook, however, this is done with a separate short length of thread. The commencement end of this thread is knotted round the near side distal point hole lashing, passes to the near side proximal hole lashing, makes one turn round this, is then pushed through the proximal hole to the far side, binds the far side proximal hole lashing with one turn and passes down to the far side distal hole lashing round which it is knotted.

All but three hooks have the secondary hackle. One has nothing to take the place of this hackle. The second has a thread about 3 inches long knotted an inch from one end round the near side distal hole lashing, the two ends of the thread serving as a sort of secondary hackle. On the far side distal hole lashing, the finishing end of the thread lashing, after being knotted round the distal lashing, is cut off about 1½ inches from

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227 284 the lashing and serves as a single secondary hackle for the distal side. The third hook has on the near side a length of thread which is knotted round the proximal hole lashing and the free end of which passes to the distal hole lashing on the same side, is knotted round this and cut off about 1½ inches from the distal lashing. On the far side, a thread was probably fastened in a similar way, but has been subsequently broken.

227 284 171 Two of the 28 hooks have points with three holes. Informants suggested that both of these hooks showed Manihiki influence. One of them was made by a Manihiki man long resident in Pukapuka and is one of the hooks with the exceptional secondary hackle. The snood is passed through the middle hole, turns between proximal hole and head hole are added as is customary with Pukapukan hooks, and the snood is seized as far as the head with turns that pick up and drop these head turns. The proximal hole lashing passes over the snood loop. The attachment of the snood to the middle hole is the attachment described by Buck (29, p. 177, fig. 89,*e*), and was done presumably for the same reason Buck gives; that is, because of the position of the holes—the middle hole being very close to the distal hole, the snood is passed through the middle instead of the proximal hole, to prevent the point lashings from being too close together. The addition to this hook of the Pukapukan method of seizing the snood presents an interestingly lashed hook which shows characteristic lashing patterns of two atoll cultures fused in the one object and illustrates also the importance of the personality of the fisherman in initiating new features. The hook has no filler sticks.

In the second hook with three point holes, the snood is passed through the proximal hole, the point lashings through the middle and distal holes. The hook is otherwise lashed according to Pukapukan technique and has filler sticks.

227 284 **Winding of snood.** After use, the bonito hook and snood are detached from the bonito rod and soaked in fresh water to wash out the salt from cord and lashings. The hooks are hung to dry in the shade. The snoods are then wound in a characteristic way.

Commencing about 5 inches from the head of the shank, the snood is wound transversely in longitudinal lengths round the fingers of one hand. When the winding has reached a point about 12 inches from the free end of the snood, the lengths are slipped from the fingers and passed over the point of the hook so that they lie along the front of the shank above the seized part of the snood. The free end of the snood is then passed transversely round shank and snood lengths about the middle point of the shank and the finishing end fastened to the last transverse turn with half hitches or overhand knots. The compact bundle of hook and snood is then placed away in safety until it is required again.

227 171 114 **Summary.** The Pukapukan bonito hook shows a number of constant features which make it a typical example of the western Polynesian bonito hook class as regards both type of point and the attachment of the snood to the point. Examination of a number of hooks reenforces conclusions drawn by Buck from a comparative study of bonito hooks (29, pp. 187-194). Pukapukan variations on the type pattern, while interesting in themselves, merely accentuate constant features of this pattern.

Macgregor (20, pp. 30-31) from an examination of eight bonito hooks in Bernice P. Bishop Museum attributed to Pukapuka, states that Pukapukan hooks "have features other than the snood attachment which make the two types [of eastern and western Polynesian bonito hooks] more diverse than Buck's classification suggests." Macgregor proceeded on the basis of his Pukapukan hooks to make a subdivision in the western group between purely western (Samoa to Pukapuka) and marginal western (presum-

7. [See 2; McGregor-- analyst.]

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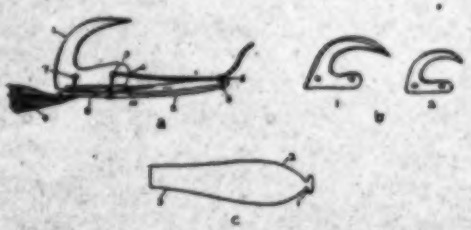
ably Pukapuka, also Manihiki, Rakahanga, Fagatau). It is unfortunate, however, that of the eight hooks on which this newer division is based, four only are Pukapukan, the remaining four hooks being typical Manihiki hooks. Informants were at great pains to make the point clear that Manihiki hooks attributed to Pukapuka were not authentically Pukapukan even if they were procured from a Manihikian man on Pukapuka. In any case they felt that the collector had become confused in his localities and had mislabeled hooks actually procured from Manihiki. Examination of the series of 28 bonito hooks indicates clearly that all but two of these conform to one general type and that the remaining two definitely show Manihiki influence. Hence one may conclude that Macgregor's analysis was based on an unfortunate mislabeling of museum specimens which invalidates his whole argument and indicates that Buck's analysis may still be taken as final.

Two old Pukapukan bonito hooks are figured in the literature: one collected by Gill before 1877 and shown by Beasley (4, pl. XLIX A, 1), a hook with a pearl-shell shank and turtle-shell point, apparently conforming in all particulars to the type Pukapukan hook. A second hook figured by Edge-Partington (8, 1st ser., pl. 62, 4) is also a typical Pukapukan hook. These hooks help to establish the stability of the Pukapukan type.

Small Composite Hooks

227 Small composite trolling hooks (*pa*) are made with pearl-shell shanks and turtle-shell points (fig.43,*a*). Hooks with shanks from 2 to 2½ inches long are used in trolling for *komuli* fish and are named generically *pa tahi komuli*. Smaller hooks, with shanks from 1 to 1¼ inches long, are used for *malau* fish and are termed *pa malau*.



227 284 FIGURE 43.—Small trolling hook (*pa tahi komuli*) (CB133). *a*, composite hook: point (4) first lashed to shank (2) through proximal hole (3); snood (4) passed through proximal hole and seized with free end of proximal hole lashings; seizing continues until head is reached when thread makes transverse turns (5) around shank and binds them with circumferential turns (6), then seizes snood for about 1 inch beyond head; distal hole (7) of point lashed, commencing with thread passing from proximal hole underneath shank (8) across to distal hole on far side, thence back through distal hole and around shank to fix hackle (9) of *wao* fiber with oblique turns; no secondary hackle on this hook; filler sticks (10) inserted between lashings and sides of point base. *b*, small trolling hook points of turtle shell: 1, large point, beveled edges, rounded bend, and inverted functional point; 2, small point, rounded bend, short inverted functional point. *c*, pearl-shell shank: 1, notched projecting head; 2, widest part; 3, tail.

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223 284 lashes rod to crossbar end; free end of cord carried down to handle and lashes ends of rods of handle; finally, free end of cord carried down handle, making transverse turns around handle at intervals of 15 inches; 4 feet from proximal end of handle, cord makes 8 transverse turns around handle and fastens with overhand knot. This lashing enables the bird catcher more quickly to draw in his net by providing a firm hold for his hands. Light rods (4) attached to stout rods (3, 3') by scarf joins lashed with transverse turns on one side and oblique transverse turns on the other; two ends of light rods overlap (5) and are fastened together; natural springiness of thin rods makes net framework heart-shaped. Net attached to handle before ends of light rods are lashed together; each rod passes through marginal meshes (6) of net, net being attached directly and without use of marginal cord; proximal end meshes of net are gathered on a double cord which loops loosely around head of handle below crossbar and has two ends knotted together. Net is 29 inches deep; greatest width at mouth 31 inches.

171 227 286 Netting needles (*tui* or *uuua*) and mesh gauges (*yika*) are used. Of two types of needle, the *uuua* type (fig. 44,*a*) is similar to those used in other parts of Polynesia. One end of the netting cord is passed through the hole and knotted. The rest of the cord is wound longitudinally between the two slots; the knotted end prevents the cord from slipping off the needle when only a few longitudinal turns remain on it. The second type of netting needle (*tui* or *yuki*, fig. 44,*b*) is loaded by making a clove hitch on it at the point of the notch and just forward of the terminal knob (which prevents the clove hitch from slipping off the needle) with the free end of the netting cord. A length of about 30 inches is measured off and another clove hitch made round the needle. This process is repeated until a sufficient length of cord is attached to the needle, hanging from the terminal knob end in double lengths of about 15 inches. In using the needle, a double length of cord is slipped from the blunt point of the needle. When this length has been used up, a second length is slipped from the needle and the process is repeated as the netting advances. In slipping the cord from the needle, the clove hitch in the cord unties itself. Needles are made in various sizes to suit different sized meshes.

The *yika* gauge is a flat rectangular piece of wood scraped smoothly or a piece of turtle shell. A mesh gauge of turtle shell (C8131), used to make the flying-fish net in the museum collection is 3½ inches long, ⅜ inch wide and ⅛ inch thick. The edges are polished smooth. Mesh gauges are of different sizes according to the size of mesh required.

TECHNIQUE

171 227 286 To make a net is *tui te kupenga*; a mesh is *mata kupenga*. The Pukapukan technique of netting (fig. 44, *c*) corresponds to the Samoan method described by Buck (27, pp. 470-472) with one variation.

The netting needle is loaded and the required mesh gauge selected. An assistant holds a light supporting rod of wood around which the first meshes are made, the assistant judging their size by eye. This variation on Samoan starting technique is the same as the Manihikian technique save that a supporting rod replaces the supporting cord used in Manihiki. (See 29, p. 161, fig. 73.) When the Pukapukan netter has made the first row of meshes he transfers these meshes from the rod to a supporting cord. The ends of the cord are knotted and the cord looped round a stick placed in the ground or else round the toe of the netter. As each row is completed, the net is turned and successive rows are added by the same technique.

One Pukapukan method of narrowing bag nets is by the addition of extra meshes, the common Polynesian technique. A second method is by making a netting knot round two or more meshes. Thus in the bird net and in the flying-fish net described below, the bottom of the net is narrowed by gathering together under the thumb four successive meshes and making the netting knot round these four meshes together (fig. 44,*d*). The

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171 227 286 method corresponds to the Samoan technique of "dropping meshes in the various rows" (27, p. 472): gathering together two or more meshes in one row to function as a single mesh means that in the next row there will be fewer meshes with which to work, hence the technique is equivalent to dropping meshes from subsequent working rows.

TYPES OF NETS

227 286 The seine net (*kupenga*) and the large hand fishnet (*tae yaeke*) have been described (pp. 57-58). The flying-fish dip net (*tae malolo*) consists of a long handle, a crossbar and framework (figs. 45,*a*, 46). Its use is described on page 58.

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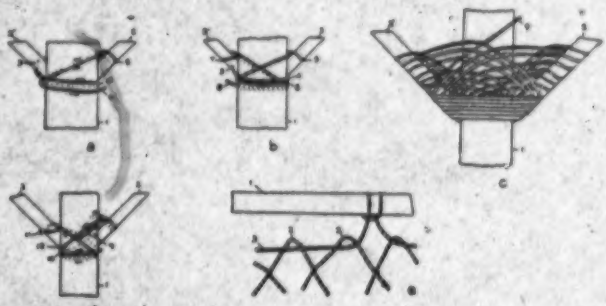

FIGURE 46.—Lashing of flying-fish net framework. *a*, commencement of lashing of stout rods (2, 2′) to handle (1): commencement end of sennit cord (3) laid on far side of left rod; cord brought around in front of handle and transversely (4) around to back, across to far side, then up diagonally across near side, passing between rod (2) and handle, across front of rod (5), then diagonally down far side of handle, passing around and across front of handle (6). *b*, continuation of lashing: free end (6) passes to back of handle, diagonally up and across to rod (2′), around front of rod (7), behind it and diagonally down and across front of handle, and around back of handle (8); this establishes lashing pattern, which is continued for about 12 or more complete diagonal turns passing to each rod. *c*, completed lashing pattern is here shown with six turns only; *d*, on top of pattern are superimposed four superior diagonal lashing turns; method of making turns shown here (inferior lashings omitted); free end of cord (9) passes diagonally down far side of handle, around to front (10), across handle, diagonally up far side (11), around rod (2′), diagonally down near side, around far side of handle again, up diagonally across near side (12) to rod (2), around this rod and diagonally down across far side of handle; lashing pattern is continued until there are two diagonal lashings up and down handle; finishing end of cord carried diagonally across near side of handle to rod (2), makes two transverse turns around rod and buries finishing end underneath these two turns; finished lashing is of neat and pleasing design. *e*, attachment of flying-fish net to frame: 1, rod of framework; 2, marginal net meshes; 3, marginal cord passes through meshes, then up to frame, making a clove hitch around rod, passing down to pick up more marginal meshes; process continued until all marginal meshes are picked up on cord, rod clove hitches 6 to 8 inches apart, free ends of cord wound round handle just below cross-lashing holding suspensory lashing of crossbar to handle; second cord passes through marginal meshes at proximal end of net and is fastened to stout rods above lashing of crossbar.

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227 The flying-fish practice net (*tae penu*) used by young men to catch pandanus keys thrown at them in practice sport is of similar shape to the flying-
286 fish net, but smaller.

It consists of a handle of *wetou* wood, 4 feet long and 1½ inches in diameter, a crossbar 8 inches long, ¾ inch in diameter, and two stout rods of pandanus wood, 3 feet long, which are fastened to handle and crossbar, the ends bent close together and tied without the intermediary of lighter rods (*matai*) used in the flying-fish net frame. The lashings of framework and attachment of net to frame are similar to those of the flying-
[284] fish net. The practice net is made of the two-ply twisted fiber from the aerial roots of *yulu* pandanus. The net is 13 inches wide at the mouth, 18 inches deep.

223 The large bird net (*uuata*, fig.45,*b*) differs in shape from the flying-fish net.

The net framework is attached to the handle in such a way that the distal end of the framework rises at an obtuse angle from the plane of the handle. The distal point of the frame is 10 inches higher than the plane of the handle. The framework when viewed sideways presents the shape of an enlarged spatula. When the bird catcher brings down the net upon a flying or roosting bird, the net is reversed so that the distal end of the frame is lower than the plane of the handle. A bird flying from the net is more likely to be caught by the downward projecting spatula-shaped net than it would if the net frame were in the same plane as the handle. The frame and handle are made of light wood so that the net may be easily used in the tree tops. The net itself is made of fine two-ply twisted sennit.

TRAPS AND SNARES

136 Because the fauna of a coral atoll is extremely simple, there are in Puka-
223 puka only two types of bird snare and a form of the widely distributed western Polynesian rat trap.

234 The construction and operation of the rat trap (*vaka kiole*) are shown
[171] in figure 47. The trap is baited with mature coconut flesh (*ipiipi*) and set in a runway made by rats. The rat is removed by the owner of the trap, who resets the bait stick and spring mechanism.

The coconut-shell bird snare (*maenga kui*) is shown in figure 48,*a*. Another bird snare (*maenga tuli*), shown in figure 48,*b*, is set on the beach, weighted down with stones, and the birds driven through it.

225 Though not strictly traps or snares, wooden structures (*pa wonu*) in
231 which turtles are kept may be described in this context.

Stakes of *puapua* or *pukania* wood, each about 5 feet long and 1 inch in diameter, are driven into the sea bottom a few yards from low water level of the beach. The stakes are arranged about 1 inch apart to form a rectangular enclosure 3 feet square, and 4 feet high. The stakes are bound together at top and bottom with horizontal poles and a continuous lashing which makes transverse turns round vertical and horizontal members. Baby turtles, caught as they emerge from their shells, are placed in these enclosures. They are fed regularly on squid and octopus until they are mature enough to be killed for a special food division. The size of enclosures observed varied according to the number of turtles placed within. An enclosure of the above size housed two turtles with shells about 12 inches long. Bigger structures contained five or more small

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TOYS AND SPORTS EQUIPMENT

524 824 171 Pukapukan children are clever at making original toys from coconut leaflets. Coconut leaflet toys, made by children according to the technique described for Aitutaki (26, pp. 318-322), include the leaflet Jew's harp (*vivo*), the windmill (*poteka launiu*), the leaflet bull roarer (*wakatangitangi*), and the leaflet spinner (*wakaki matangi* or *wuti lele launiu*). Whereas the Aitutakian spinner is made with a collar and suspended with a banana leaf fiber (26, p. 321), the Pukapukan spinner is closed by skewering the two leaflet ends together with a piece of coconut leaflet and is suspended by a strand of human hair knotted to a thin length of coconut midrib.

A trick figure made from a strip of dried coconut leaflet is termed *te tionga a Maui* (fig. 49,*b*), because the gods gave this figure to Maui to see if he could disengage the two leaflet sections when they were testing out the culture hero. Children and adults spend much time trying to solve the puzzle, without success however, for the solution, if ever there was one, is now lost.

A coconut-leaflet trumpet (*pu launiu*) is made by Pukapukan children. Leaflet midribs are stripped from eight or more coconut leaflets:

> The leaflets are rolled spirally into the shape of a cone, successive leaflets being added by overlapping the ends. When a trumpet of suitable size has been made, the free end of the last leaflet is skewered to turns underneath with a small fishbone or splinter of wood. A reed made by doubling a piece of leaflet along the mesial transverse line is inserted into the mouthpiece of the trumpet.

A favorite toy made during our stay was leaflet spectacles which children perched on their noses, pretending they improved their sight.

524 171 Two types of ball are in use: one is a round ball made of *wakanava* wood used in cricket; the other is a somewhat square object made by covering a stone with plaited check coconut leaf. Both balls are termed *bolo*, a name presumably derived from the English word "ball". Either the old name for the ball has been forgotten, or the ball is an introduced toy.

526 527 Coconut-cup shoes (*tui ngaipu*) are made by threading a length of pandanus or sennit through the eye of a half coconut shell. The foot is placed on the shell and the cord passes to the hand between the big and second toes. Children wear these shoes today for sport, but informants said that formerly adults occasionally held coconut-cup foot races during the time of merry-making that introduced the six months of pleasure.

177 Wooden stilts (*lole*), said to be introduced, are sometimes used by children.

524 The toy bow (*uvau*) and arrow (*ti*) made from coconut-leaflet midribs is an introduced toy. Marbles were also unknown formerly, but today children use as marbles (*pei*) seeds from the *wetau* tree.

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MUSICAL INSTRUMENTS

534 202 Pukapukan musical instruments consist of the wooden slit gong, the true drum, and the shell trumpet. The shell trumpet (*pu*) was made by cutting off the apical whorls of the shell *Cornis rufo*. It does not seem to have had much status in the culture and informants were vague about its use. Probably it was blown occasionally to call together the people of the island when meetings were held or announcements made.

[171] Wooden slit gongs (fig.50,*a*) were of the usual Polynesian pattern. Informants were confused as to the proper names for the gong as distinguished from the drum. Majority opinion called the smaller wooden gong *nawa*, the larger gong *kolilo*, the single-ended drum *payu*; some informants however did not agree with this terminology and preferred to call a wooden gong of any size *pate*, reserving the name *payu* for the single-ended drum and giving the name *nawa* to a double-ended drum; the word *kolilo* they believed to be a foreign (*pa uenua*) word for the gong (compare Manihikian *koriro*, wooden gong).

533 Wooden slit gongs are made in two or more sizes, a small gong for a high-pitched sound, a large gong for a lower pitch. All gongs are beaten with a wooden beater (*kauta*). Formerly, when a large chanting and dancing festival was held, the fore section of a canoe hull (*waa vaka*) was beaten to give a deep basic rhythm against which the higher pitched gongs provided counter rhythm; occasionally a whole canoe was carried to the dance ground and the gunwales beaten with sticks to make the dance rhythm.

533 534 The single-ended drum (fig.50,*b*) was used as one instrument in an "orchestra" of drum and gongs to keep the rhythm for dancing and chanting on all occasions when chants were recited—at sports celebrations, wrestling triumphs, and death wakes. The usual drum was much bigger than the one figured, probably twice as high and twice the diameter. It was usually so high that a man could play it easily when standing before it.

The double-ended drum was between 3 and 4 feet long, made of *teahoaou* or *uetau* wood. Each end was about 12 inches in diameter, hollowed out to a depth of about 12 inches, and covered with shark skin which was tightened by a continuous lashing of sennit that passed back and forward between the two skins. Toward the middle of the drum two holes were bored through from one side to the other. Sennit was threaded through these holes, knotted together and the drum was slung round the neck by this sennit cord. The drum was beaten in the procession of the winning village to the dance ground when celebrating a sporting triumph. I did not see this double-ended drum; probably if is rot an ancient Pukapukan musical instrument.

To play the drum is *lulu ki te payu*. The musician beats the skin surface with the fingers and heels of the hands, using the inner surfaces of the forearms to make stops demanded by the rhythm.

Wooden gongs and the shark-skin drum are still used in Pukapuka today to beat the rhythm for the introduced Tahitian style dancing. An empty

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613 group. If the head is a male, he is succeeded at death by the next oldest
616 member, sometimes by his sister's son. His functions are light. He acts as gift-giver at the *wuele* feasts for first-born children in the families making up the descent group. He represents the lineage at inter-lineage and village meetings, arranges for the carrying out of its activities in games, competitions and feasts. He has no special status in the community beyond a certain position within his own group, based on seniority. There is no record today of internal moiety organization, but it is likely that the senior lineage within the moiety formerly appointed a head man to oversee the affairs of the moiety.

776 No tapu objects are linked with the maternal lineages today. No gods
171 were linked with them in former times.

Informants had little clear memory of any association between moiety, lineage, or sub-lineage and plant, animal, or natural phenomena. There is no suggestion of any relationship that could be construed as totemistic.

It is possible that formerly each lineage had associated with it a type of decoration, or an object used as a status or prestige symbol. A suggestion of this occurs in the chant, "Panenu Te Watu, kino te wenua" (1); informants thought a reference to the *lei*, a seaweed that grows in the ocean and is said to color the sea red or yellow or green, was associated in some way with the Wua Uila. Informants were unable to define this relationship, nor could they in general give the names of other plant or natural phenomena linked with any of the other lineages. Two reliable informants, however, asserted that the *weiau* and coconut trees were linked with the Lulu, and the pandanus tree with the Kati groups. They could give no details of this linkage and this reference may refer to a time when there was a type of prestige symbol associated with each lineage, a matter otherwise totally forgotten today.

613 Today the sub-lineages are strictly exogamic. To marry a member of
582 one's own sub-lineage is to commit incest (*kai wale*, "house eating" or *kai*
684 *hiko*, "flesh eating"). There was no secular punishment for this breaking
776 of tapu, but the goddess Taua or the god of his paternal lineage would punish a male deviant with sickness, tumors, or accidental death by falling from a tree; and Mataliki or the god of her paternal lineage would punish a woman with sickness, accidental death, difficult childbirth, loss of her child in childbirth, or barrenness.

613 The maternal lineages are neither exogamic nor endogamic. The mem-
616 bers of a lineage, provided they do not belong to the same sub-lineage, may intermarry if the other rules governing marriage, avoidance tapus, and rules of consanguinity are not infringed.

618 In former times, before the sub-lineages had subdivided themselves from the lineages,
582 the moieties and lineages were possibly exogamic, and the lineages functioned as clans.
171 As the number of lineages in each group increased and subdivided into smaller functional units, each sub-lineage continued the pattern of exogamy derived from the larger unit, and there was then no need to stress lineage exogamy. More precisely, exogamy,

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transferred to the smaller sub-lineages, took the place of exogamy in moiety and lineage. As long as there was one lineage in the *vuna*, the *vuna* was exogamous. When many sub-lineages developed within the *vuna*, the sub-lineage still remained exogamous but not the lineage, since blood relationship was closer, owing to consanguinity, within the simple sub-lineage than within the wider grouping. This is admittedly speculation, but it explains the manner in which the fundamental pattern of exogamic matrilineal groups, so widespread in western Oceania, may have developed in the evolution of Pukapukan society.

The maternal lineage functions as a unit in fishing and sporting contests, and in certain types of food divisions. (See pp. 231-232.)

Some informants believed that the four major lineages divided into two moieties (each called for this purpose *waitatoi*) once formed fighting units occasionally opposed to each other. Such a moiety fighting force had no organization and was commanded by a selected warrior (*toa*). Other informants stated, however, that there is no record in Pukapukan history of such fighting as this arrangement would suggest, with all the men of the island engaged in pitched battles. This is certainly true; Pukapukan fighting in general seems to have been a matter of one age group tyrannizing over another group, petty murders, guerilla revenges, and killings by violent chiefs. More important conflicts over land boundaries were always decided on a village basis, with no scope for moiety division. It is possible that moiety divisions for games and contests were at one time more customary than single lineage divisions, and the belief about fighting units is merely an extension of a type of organization, which, in terms of Pukapukan patterns, represents the most reasonable division to cover warfare were it ever a matter of importance to the community.

Today the maternal sub-lineages, not the lineages or moiety groupings of lineages, have effective economic functions in the control of land, principally the control of talo beds. The talo beds owned by a sub-lineage are divided among both male and female members of the sub-lineage. There is no permanent subdivision of these talo beds; but they are divided at regular intervals as composition of the sub-lineage corporation is altered by birth and death. The ultimate controlling unit of the sub-lineage land is, of course, the major lineage; when a sub-lineage dies out, the talo beds are redivided among the remaining sub-lineages of the group.

Formerly the sub-lineage assumed collective responsibility for antisocial actions voluntarily or involuntarily performed by its members. This is clearly brought out in historical stories relating to homicide (1). When a man commits manslaughter such that the island as a whole concerns itself with retributive punishment, his maternal sub-lineage either allows itself to be punished along with the guilty individual or else assumes responsibility for the punishment or suicide of the murderer. When punishment by drowning is decreed, members of the sub-lineage may feel the disgrace so keenly that they will bury the body secretly by night, even though in so doing they oppose majority opinion and would be severely punished themselves if discovered. That it is always the maternal and not the paternal sub-group which is charged with responsibility in these matters, stresses the strength of relationship ties based on maternal descent.

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618 616 613 297 621 578 226

period, organization was in terms of either *iwa* or *yolongo* units. Village membership is the rule for team organization today, so that Loto village contests with Ngake and with Yato villages. It is probable that missionary effort hastened this change. Informants believed, however, that groupings of maternal or paternal units are superior to the village grouping. The following example was given: suppose there is a man who was born in Ngake, but who affiliates and resides (*wilo*) in Yato. In an inter-village contest he fishes for Yato. He hooks a fish. If he pulls it into his canoe, his Ngake friends are angry with him for catching a fish for a rival village, and thus helping to defeat the village of his birth. If he lets the fish escape, his Yato friends are angry with him for remembering the village of his birth to the exclusion of his adopted village. Hence the man is at the mercy of conflicting loyalties, and he antagonizes friends whichever way he acts. The old maternal or paternal organization, therefore, was superior to the present village division.

612 621 618 574

Food divisions following fishing contests and other games are always in terms of either maternal or paternal organization. They are arranged in advance by village elders and food distributors. Before the division of food for a fishing contest (*malomo*), the food dividers asked me how I wished the food to be divided. As I left the responsibility to them, they decided to make the division on the paternal (*yolongo*) principle. The food was first divided into three equal piles for the villages; then each pile was divided among the paternal lineages of each village.

Food divisions at marriage and birth feasts were formerly always in terms of maternal units. This is still common today, though division is sometimes made among the actual household groups concerned in the marriage. Food divisions of reserve lands produce are always in terms of village division. This follows the rule that control of reserves and work thereon is always maintained by village groupings.

613 616 618 597 611

It is a permissible speculation to consider Pukapukan history as a struggle for dominance between these three social groupings, principally however, between the maternal and paternal lineages. At the present time, the paternal lineage is much more important in social organization than the maternal grouping. The maternal sub-lineages still influence marriage and control land, but they share these functions with the paternal lineages and with the villages. The smaller maternal lineages seem to be dying out, or at least to be more and more subsumed by the moiety groupings. Dwindling numbers could easily be remedied by recourse to adoption, but maternal lineage adoption is rare, for the reason that few wish to take the trouble to keep the maternal lineages alive. The fact that the maternal lineage memberships of the principal characters in legends and stories are not remembered suggests that even in an immediate past these groupings were not so important as the paternal groupings. At the present time, the paternal lineage is strong in its control of wealth, rank, inheritance, and succession. Both paternal and maternal lineages control food divisions and previously controlled organization for contests.

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Kennedy (19,p.297), speaking of Vaitupuan social structure, especially with reference to the exchange of presents at marriage and birth, sees definite evidence "of dual organization and matrilineal descent". The maternal lineage in Pukapuka also functions as a controlling unit at birth and marriage. Kennedy believes that in respect to dual organization, Vaitupu "was at a

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stage of transition from matrilineal to patrilineal descent wherein the point of equilibrium had not long been passed in favor of patrilineal descent." This is strikingly parallel to Pukapuka, but unfortunately Kennedy's analysis of Vaitupuan social structure is so unclear that no more particular comparisons may be made.

POLITICAL ORGANIZATION

Age Groups

Pukapukan society has a well-developed system of age grades through which each individual passes. Political functions for the island as a whole were at one time exercised by men of the oldest age group, the *tupole*. These men served as an advisory council to the chief (*aliki*), who might be of any age group. Control of village affairs was and is nominally in the hands of all the men of the village, though older men naturally have more power because of their experience; women have no formal political duties. Membership in successive age groups was determined by the functioning of a mechanism called *tai tangata*:

> The age of a person is reckoned from birth. The first woman to give birth to a first-born child in each season of six months, whatever her paternal or maternal lineages or her village, announces that her child is the *tai tangata* for that six-month period, which is then called *te tahalonga o Mea* (the year—six months—of So-and-so). All other children born in the same period are classed in the age group of this *tai tangata* and are known collectively as a *tai tangata* group. Hence a man says: "Koa wanau au i te tahalonga o Mea" (I was born in the year of So-and-so), or, "Ko Mea, te wakauluaki o tai tangata" (So-and-so is the first-born of my *tai tangata*). If, as occasionally happens, no first-born child is born in the *moina utuutu* (pleasure moons), then the oldest first-born child of the succeeding *moina ya* (tapu moons) becomes the *tai tangata* of the preceding *moina utuutu*, and all children born during the twelve-month period are classed with this *tai tangata*. There is thus a slight variability in *tai tangata* periods, but the important thing to remember is the serial temporal order of the *tai tangata*. This enables a person to reckon his age with sufficient accuracy for practical purposes. One *tai tangata* group succeeds its predecessor in progressing from one age grade to the next. No mnemonic device is used to keep track of the order of *tai tangata*.

The Pukapukans named a number of age grades or life periods:

Kulapapani (child covered by a mat): infant up to the age of about 3 months.
Kulimoemoe (sleeping child): infant from 4 to 12 months.
Koumoto (immature coconut): boys and girls from walking age to about 10 years, also called te tamaliki or te iaaliki (children).
Tamaalonga and tautitinga (to put on a malo or kilt): youths and girls who have reached sociological adulthood.
Kiwatangalou: young people who have assumed first responsibilities as adults; more commonly called loga and tamawawine.
Tane and wawine: married men and women, adults with families.
Matuaka or tangata matua: older men and women of the community, from the age of about 50 years on.
Tupole: the old, grey-haired men of the community, sometimes called in general te kau matuaka.

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643 no canoes might be beached, nor commoners trespass. The family of the chief bathed at the next break west of the chief's channel. When the chief 644 had finished his bath, he was carried from the water on the upstretched hands of his family retainers to Te Ulu-takapau where he rested under the shade of coconut leaf mats supported by poles. No commoner would intrude on this place. Close by it were made the special divisions (*laukava*) of chiefly feasts. The minor chiefs had similar beaches and reserved places close to [613] their houses in their respective villages. When the chief walked abroad for exercise, the people moved away to allow him sole and undisputed right to the road.

645 Besides his family, those most in contact with the chief were his sub-
613 ordinate chiefs, his executive (*wola*), and his attendant (*toa*). This last functionary appears to have been a combination of personal servant, body-guard, and general executive for the chief. He belonged to the lineage of the chief. He was referred to as *te talatala no te aliki* (the talker of the chief) and generally acted as the chief's agent in calling meetings, carrying messages, arranging food divisions, and like matters.

195 There was no chiefly language in Pukapuka, no word used only by those
571 of chiefly rank, or by commoners in addressing the chief. Only a special salutation was used for the chief and for his children, who were greeted: "E vale e . . . " without using the chief's name. By transfer, when one commoner wished to use an extremely polite greeting to another, he used *te vale*, as "Na yau ko koe, te vale, nei" (You have come, o *vale*). Such a polite form of greeting is termed *wakakauvale*.

613 Besides these various tapus, all the major chiefs were priests by virtue
793 of rank. This prerogative was shared also by the executives (*wola*) of these chiefs. In those lineages where there was no chief, only the priest might
643 go to the sacred enclosure of the lineage and consult the gods. In the chiefly
645 lineages—Tua, Matanga, Muliwutu, and Yalongo—priests, chiefs, and executives could all go on the sacred enclosure without violating its sanctity. The division of functions was such that the priest consulted the gods on intra-lineage matters, the chiefs and the executives on matters affecting the island as a whole or the relation of the lineage to other lineages.

SACRED MAID

643 A final symbol of the status of the chief and of the chiefly lineage was
[171] the pattern of appointing a *mayakitanga* (sacred maid). (Cf. *mehekitanga*, 613 the Tongan kinship term applied to father's sister.) Either the first-born female child of the chief or another girl of the chief's lineage was chosen for this purely honorific office. Generally she was supposed to be the most beautiful girl of the lineage. Chosen at the age of about ten years,

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601 171 relationships, the system is essentially simple and presents few complexities. Dual lineage organization has had no effect observable today upon the kinship system or terminology. Terms follow the usual Polynesian system of stratification. It may be stressed again that the distinction between blood and kin relatives called by the same term is always and easily kept in mind by the native, and there is never any confusion as to the proper emotional attitude or behavior due to the various relatives. The intension of kinship feelings, that is in terms of formal pattern, varies directly with the extension of the application of the kinship terms. Terms are not used in direct address, but as terms of description, save in mourning ceremonies, when a [551] mourner addresses the corpse by the appropriate kinship term; at all other times, personal names are used in address, including that of child to parents.

Table 7. Kinship Terms

Stratum	Collateral	Lineal	Affinal
2	Tupuna tane (great uncle) Tupuna wawine (great aunt)	Tupuna (grandparent)	Tupuna (spouse's grandparent)
1	Matua tane (uncle) Matua wawine (aunt)	Matua tane (father) Matua wawine (mother)	Matua angavai tane (father-in-law) Matua angavai wawine (mother-in-law)
0	Cousins of same sex as speaker, taina; cousins of opposite sex to speaker, kainga wakaina or wale atua	Siblings of same sex as speaker, taina; siblings of opposite sex to speaker, tua tane (w. s.), tua wawine (m. s.), kainga (m. or w. s.)	Taokete tane (brother-in-law), taokete wawine (sister-in-law). Affinal relatives generally, tao tangata
—1	Tamatane (nephew), tamawawine (niece)	Tamatane (son), tamawawine (daughter)	Unaonga tane (son-in-law), unaonga wawine (daughter-in-law). Affinal relatives at this level generally, konga tangata, as, tua konga tane, brothers of son- and -daughter-in-law.
—2	Makopuna tane (great nephew) Makopuna wawine (great niece)	Makopuna tane (grandson), makopuna wawine (granddaughter)	Descriptive terms, as, wawine na taku makopuna tane, wife of my male grandchild

601 One important characteristic of the Pukapukan system is the absence of special terms to express seniority among lineal descendants of the same stratum. This is done only by the addition of descriptive terms. A younger brother calls an older brother *taina mua*. By the use of the terms *mua*

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more logical to bury the corpse with the head facing this direction. It is likely, I think, that the idea of the corpse facing the west is a survival of the common Polynesian concept that the point of departure for the soul on its way to the Underworld is always to the west.

After the corpse is covered with the coral and sand dug from the grave, a food division is made among all the people who attended the wake whether or not they brought food or special gifts for the corpse. Where the ceremony is on a large scale, all the people in the village of the chief mourners send nuts to the deceased to enable his family to make a large food division in keeping with its dignity. Further nuts are obtained by stripping the row or rows of coconut trees planted round the border of each cemetery, reserved for use in death divisions and tapu for ordinary purposes. They are called *niu wakavale* (nuts to tame) with the idea, informants suggested, of taming or satisfying the spirit of the dead person, who would not go to the Underworld happy unless he knew that honor had been satisfied by a food division among all those who had attended his wake. For an especially impressive division, pigs, fish, and prepared talo are also divided among the mourners. The close bilateral relatives of the deceased formerly remained at the cemetery to watch the grave for a period of one or two moons. This mourning period was termed *taupo*. The mourners lived in a permanent house (*wale matenga*, death house) built in each cemetery. The relatives ate and slept by the grave, watching over it continually. The men might leave for a time to fish, the women to get talo which they prepared in a cook house (*wale imu*) close to the death house. Relatives brought food at regular intervals to the mourners. Between the two big cemeteries of Muliwutu and Matanga lineages in Ngake there is a pile of *Tridacna* shells, a sort of midden heap, approximately 20 feet long, 10 feet wide, and 4 feet high in some parts—silent witness of the many years these cemeteries have been in use and of the popularity of clam flesh with mourners. Throughout the period fresh nuts, fish, and talo for the soul to eat if it came back at any time from the Underworld were hung up outside the house of mourning by cords tied to the eaves purlins. It is evident that thieves might sometimes steal this food, for there is a special name, *tangata kaiyepu*, for such a thief.

On the second or third day after interment the mourners beautified (*wakaleleï*) the grave by spreading over it white coral pebbles carried in coconut baskets (*kete*) from the outer beaches. These pebbles were not replaced when they became weather-worn and grey. The work on the grave completed, a food division, called *puyia wale*, was made by the deceased's relatives among all those who attended the mourning, sat with the corpse, or (today) helped to build the coffin, dig the grave, carry the corpse to the grave, or beautify the grave.

When the deceased's closest relative felt that the mourners' hearts were

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the end of the seclusion period for boys attaining adulthood. In general, it seems that the house was reserved for the exclusive use of the priests and that others went there only on errands.

Besides priestly costume, peace "nets" (*kupenga welo*)—one associated with each of the gods Te Laupapa, Te Alongaoa, Taua, and a forgotten Yato god—were kept in the principal god house of the lineages. One was strung up at a meeting place by priests before the people congregated (p. 389).

The sacred enclosure (*awanga ya*) corresponds to the religious marae of other parts of Polynesia. Though no enclosure remains in existence today the sites of several are well known; on two of these a few stones are still in position. (See p. 160.) In the center of the enclosure was the sacred stone (*unu*), the material representation of the god, a solid piece of *punga* coral, of any size or shape. One side of the stone, arbitrarily called the face, was turned toward the east. The priest stepped into the enclosure from one of two entrances (*pu*), breaks in the coral curbing. One entrance was on the eastern (outer beach) side and was called *pu ki ngauta;* the other on the west or lagoon side was called *pu ki tai*. The priest advanced to the sacred stone, seated himself cross-legged before it and addressed the stone, and thus the god, in this position.

Under ordinary circumstances, no person other than the priest and his servant (*taute*) was allowed on the enclosure. On set occasions, however, men went there, as to the god house, to clean up the ground, pick up rubbish, weed, refresh the gravel, or rebuild the curbings. No women assisted at this or any other time. No record survives of any ceremony designed to remove tapu from the enclosure so that the uninitiated might approach it. The routine cleanings were performed by the priest's servant who also acted as messenger for the priest.

Two worshiping structures are called *newu*, not *awanga*. These are *te newu o Tulikalo* and *te newu o Te Maungatu*. The meaning of the word *newu* in this sense is not clear. Some informants believed that *newu* is the name of the place where a god emerged from the Underworld when he visited the world of mortals. Others believed that because *newu* is the name of attendant spirits, enclosures called *newu* are those where attendant spirits of the major gods might be consulted.

The sacred clearings (*yionga*) of ancestor gods, were cleared avenues, bordered by coconut trees, which ran from the place where the man—later deified—was killed to the lagoon beach or, less frequently, to the outer beach. Clearings might be up to 100 yards long, and from 10 to 15 feet wide. They were kept weeded and cleared of rubbish. Clearings for ancestor gods were called *yionga tangata mate* to distinguish them from the *yionga ola* clearings erected for the sacred maid (*mayakitanga*) to walk on. Both types of clearings were made on land owned by the lineage sponsoring the god or the

people rushed round them to hear of their adventures. They told of their journey, and later introduced to Pukapuka all the activities—arts, crafts, and games—of the Underworld. From their visit, supplemented by voyages abroad, is derived all the knowledge of the Pukapukans in these arts.

Other priests who visited the Underworld brought back the knowledge of talo food preparations, of which the original inhabitants of Pukapuka were unaware. Perhaps, say informants, this coincided with the reintroduction of fire to Pukapuka by the god Ngaliyeyeu after the seismic wave. The seer Levi, who lived just prior to white contact, is said to have shown the people of Pukapuka many times the food—fish, talo, and nuts—that his spirit brought back to him after one of its visits to the Underworld.

Some visitors to the Underworld have reported the existence of an eight-walled enclosure on the *kapi lunga*, presided over by the god Te Vayi. In this enclosure was kept burning a hot fire, into which adulterers, for example, are supposed to have been thrown by Te Vayi. Confirmatory evidence for the existence of this walled enclosure was given by seers who told relatives of the dead that they had visited the Po looking for the souls of the deceased, in order to bring them back to Pukapuka, but that they could not discover the souls and therefore assumed that they had been consumed in this fire. It is possible that this legend of a fire burning in the Underworld represents a survival in Pukapuka of the widespread Polynesian idea of an underworld fire visited by a culture hero who brought fire back to mortals, an idea that has perhaps been affected by missionary teaching.

The souls of living, dying, or dead men that visited the Underworld seem to have had about equal chances of escaping back to mortal body or being ensnared in the Po and remaining there forever. Each of the stopping places mentioned by Wotoa and Te Yoa was either a place which reminded the soul of the world it had left, giving it the opportunity to go back before it was too late, or was a trap designed to catch the unwary soul and so draw it on ever deeper into that part of the Underworld from which there is no return. Perhaps this idea of equal chances is a reflex of the number of times Pukapukans have seen unconsciousness in sick people unaccompanied by heart cessation or decay of the body. If, for instance, the soul balancing on the oscillating stone of Yokamani was not precipitated into the Po likuliku then it still had an opportunity of returning to the upper world. But the soul that washed in the fresh water springs washed away all memory of the upper world, and its chances were proportionately less. When the soul reached the house of Leva, the gods smelled its arrival, and always anxious for fresh company to amuse them with stories, singing, and dancing, they insisted on taking the soul from Leva's mat. This represented the ultimate depth of the Underworld from which there was no returning, or at least

1:Beaglehole and Beaglehole E-5 (1934-5) 1938 Pukapukans

the voyagers made their departure from Nassau Island, they would fetch up within sight of Olosenga.

In sailing to the Gilbert-Ellice Islands, informants state that the navigators used Altair (Tolu). Sailing from Pukapuka, almost any course between 277° and 300° would take a canoe to a point close to one of the islands in the Ellice or the Gilbert groups. A course by Altair at setting is equal to 279°. As it rises higher in the sky its bearing swings to the north. It is visible at setting during the latter half of the trade-wind season when the weather is favorable for the voyage.

In voyaging from Samoa to Pukapuka, the Pukapukan navigators sailed from Upolu to Olosenga; then sailed on to Pukapuka using ζ, ε, and δ Orionis (Te Tolunga-Maui) as their star course. These stars would give a course of 88°, while the true course is 84°, and by taking from Traverse Tables under 4° (the difference between the true and the star course), and with the distance at 259 miles, one finds that the star course would put a canoe 18 miles to the south of Pukapuka. This is approximately at Tima Reef, which place would give a new point of departure for the canoe for the rest of the voyage. In case the canoe missed Tima Reef, due to bad steering or cloudy weather, it would still be likely to come within sight of Nassau or Pukapuka; and even if it missed all three landfalls, it could scarcely fail to come within a point 30 miles to the north or south of one of the islands, which point would be within sea-flight of the white terns—the sign of land. Hence, in sailing from Olosenga to Pukapuka, a distance of 259 miles, the navigator has a cross section of ocean, lying at 45° angle to his course, 110 miles long, in which to make his landfall.

Stress is laid on this point, for, to a casual observer, it seems little short of miraculous for a canoe to pick up a tiny atoll in mid-ocean. As a matter of fact, in the above case, it would be remarkable if the voyagers missed one of the two islands or Tima Reef.

Finally, the Orion's Belt course from Olosenga to Pukapuka is peculiarly advantageous as these stars are visible to eastward during the early part of the hurricane season when the winds are favorable for the return voyage. Later in the hurricane season—February and March—the winds are also westerly, but it is doubtful if a canoe would attempt the return voyage during these stormy months and, moreover, Orion's Belt would be too high in the sky to be used as a bearing. It is most likely that the return voyage would be made in December, when the winds are light from the west and Orion's Belt is low in the sky to eastward at sunset.

COUNTS AND MEASURES

The Pukapukan system of counting follows the general Polynesian system. It shows a high development of number prefixes used when counting different classes of objects. The list of numerals is:

1.	Tayi	20.	Lau lua
2.	Lua	30.	Lau tolu
3.	Tolu	100.	Lau
4.	Wa	101.	Lau ma tayi
5.	Lima	111.	Lau ma laungaulu ma tayi
6.	Ono	200.	Lua lau
7.	Witu	300.	Tolunga lau
8.	Valu	400.	Wanga lau
9.	Iva	1000.	Mano
10.	Katoa or laungaulu	2000.	Lua mano
11.	Laungaulu ma tayi	10,000(?).	Tini
12.	Laungaulu ma lua	100,000(?).	Ngaulu tini

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GAMES AND AMUSEMENTS

524 / 171 / 526 The two seers, Wotoa and Te Yoa, brought back to Pukapuka some games they learned in the Underworld (p. 327). Pukapukan navigators to the eastern and western islands, notably the chief Wue, introduced the remainder of the games played in Pukapuka. A series of 48 string figures (3) collected in the field is not included in the following descriptions of amusements.

857 / 512 Organized plays, dancing, and singing, have a large part in the life of children (2), especially in the evening when they play together on the beaches, watched by the adults who move to the beach to cool off in the evening breezes.

536 / 527 Dramatizations of selected native traditions and dramatic performances of Biblical legends are popular. These are now held on May Day; formerly they were probably associated with the festivities marking the morning rising of the Pleiades. Each village chooses one or more legends for performance. These are rehearsed for some weeks and then presented in turn before the island assembled. The performances follow in general those described by Buck (29, pp. 198-203).

CHILDREN'S GAMES

526 *Kio*, played in the lagoon, on land, or in the trees. Two equal teams (*ruka*) of children line up and face each other in the lagoon. One team occupies deep water, standing on a coral rock (*toka*). The other team is in shallower water. The deep water team dives from the rock, and, by swimming under water, tries to pass the line of defense of the inland team without being caught. Each member of the deep water team that gets past the inland team scores a point (*kai*) for its side, ten points giving a win (*ia te ulu*). The teams take turns at defense and challenging positions until one team wins. In land *kio*, the teams stand about 15 yards apart, one team trying to run round or through the other's defenses. In tree *kio*, which is uncommon, one team defends a position in front of a tree, through which the other team must go to climb into the tree.

Wai (playing) *kiu*. One player, usually self-nominated, is *kiu* (it). He stands still while each of the other players comes up, hits him on the head with the hand, and runs away. When all have hit him, *kiu* takes up the chase, which continues until he has caught and whipped each of the players.

Wakatau nana (hide and seek). A favorite in the evening when it is not easy to see. Two teams are formed and one goes off to hide. The other team gives it a few minutes' grace, and then announces, "Ka ulu!" (We shall search!) If after a thorough search they fail to find hidden players, they call out, "Wakayuyu" (literally, get wet). Then those of the hiding team who have not been discovered walk in, scoring one point (*kai*) each. The two teams take turns at hiding and searching, the first team to score ten successfully hidden members wins the contest. With this victory goes the privilege of whipping the members of the losing team. These whippings are never severe; a gentle clip on the head or back with hand or stick suffices.

Wai atua mamua (old name, playing spirit of the sea) or *wai Levi* (modern name, playing the seer Levi). Played on bright moonlight nights by small children, older girls, and grown women, of ages ranging from 5 to 40 years. Two circles (*uvuna*) are drawn about 30 feet apart. One player, usually the oldest, takes the role of Lewiha (the old name, a god), or of Levi (the modern name). He stands in one circle, all the

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Muliwutu, then to the houses of Yangalipule. At each of these houses he threw stones and called, but none would waken. At his own house none would waken. At last he came to the houses of Yamaunga. He threw stones, and two men came outside. These two were the brothers who had taken the child to Yayake. Kuluea said, "Why do you sleep so fast? I have seen something terrible and we are likely to be all killed." Meantime the three strangers had been seen going back to their canoe. The chief told the two men to stay on the reef near the canoe and to kill everything they saw in the water, even if it meant striking at drift rubbish.

The three Pukapukans consulted their gods and then went out to the reef. Kuluea dived into the water, swam to the canoe, and cut the anchor rope. The canoe quickly drifted away and soon drifted as far as Witi (Fiji?). When Luaivaipapa found out what had happened, he woke his sleeping men. "Pick up your paddles and give one mighty stroke," he said. The men obeyed, and with one stroke the canoe came back to Pukapuka. They dropped anchor again and went to sleep. Seeing them, the chief again cut the anchor rope. Three times he did this, three times the canoe drifted to Witi, three times with one paddle stroke the canoe came back to Pukapuka. After the third time Luaivaipapa watched carefully instead of sleeping; he saw the chief coming to the surface after his dive from the reef. He struck Kuluea with his foot, and so powerful was the blow that the chief was pushed to the bottom of the sea, where he fell on the ocean floor, alive but so crushed as to be helpless.

The god Kui saw the crushed chief. Kui gave Kuluea *lomilomi* treatments and brought him back to normal. The chief stood on a rock at the bottom of the ocean. With one mighty push he hurled himself to the surface with great speed. His head smashed into the bottom of the Tongalelevan canoe and split the canoe into fragments. Standing on one piece of the broken canoe, Kuluea knocked into the water the god house, the representatives of the gods inside the house, and all the people. The crew called out to their gods to save them, but the gods were helpless before the Pukapukan gods. Kuluea killed many of the men; the rest were killed by the two Pukapukan warriors waiting on the reef.

To revenge the death of their nephew, the two Pukapukan warriors later went to Yayake. They landed and killed all the people on the flat lands by the sea; then they went inland to the mountains and killed other people living there. They came to the copulating places (*you*), and like their Tongan predecessors, they killed the people congregated in them. When they came to the village of Tuyiyauola the chief threw magic stones at them, but these failed to kill the Pukapukan men. When the chief discovered that the men were determined to kill him, he stamped his foot on the land, and the land was separated into two pieces, one of which was called Matiku, the other Rarotonga. The two Pukapukan warriors drifted away on the land called Matiku, and in the end came back to Pukapuka. Tuyiyauola remained on the part of the land called Rarotonga. This was the end of the Yayake people.

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There are several interesting points in this story of the chief of Yayake. The word that the Tongalelevans used in praying to their gods when their canoe was smashed to pieces is remembered as "tulou". This word has no meaning in the Pukapukan dialect, but the same word is used in Samoa when entering a god house. All accounts of Yayake mention the places called *you* where groups of people met together for copulation. The same institution functioned in Pukapuka, but it is said to have been introduced from Yayake. *You* is recognized as a foreign word for the name of these places, the native Pukapukan word being *ati*. It was impossible to get details or an interpretation of the five-platform house of Tuyiyauola. Other accounts tell of a place in Yayake called Te Maunga-wiwi, where two mountains

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come together at their peaks to form a sort of arch or tunnel through which canoes may sail. On another occasion a warrior from Yayake named Te Palo visited Pukapuka where he introduced the four-sided gaff sail that is known by his name.

It seems impossible to decide to what land, if any, of the Pacific the word Yayake refers. The cognate Samoan word *sasa'e* refers to the east, though the Pukapuka word for this direction is *ngake*. Informants today state that Yayake refers to Tahiti, though they admit that this has been suggested to them by visitors. Any word Yayake may either mean a land to the east of Pukapuka or a land from which one sailed east to reach Pukapuka. The matter may be left until further accounts of canoe voyages away from Pukapuka have been given.

Some time after the defeat of the Tongalelevans a canoe came to Pukapuka from the Tokelau Islands:

> The captain of the canoe was Te Anu; other members of the crew were Kavalele, Kualeu, Tapotoa, and a man whose name has been forgotten. All five were medicine men (*kau wuwotu*). This canoe landed at the channel on the west side of the atoll. The passage made by Te Mutu had been quite straight and therefore dangerous because the tidal currents ripped out through it strongly. The newcomers curved the channel and thereby slowed down the current to make a safer passage through the reef. The Tokelau men brought with them a dried medicinal plant (*lenga*) somewhat similar to a red ginger plant. It was hung from the roof of the house by a sennit string. The perfumed, thick, red oil that exuded from the plant was used by the Tokelau men as a principal ingredient in their medicines. This plant never grew in Pukapuka.
>
> Besides their skill as medicine men, the strangers possessed other, more magical powers: they could see across the ocean to the Tokelau Islands; they had the power of transporting their bodies to the reserves, leaving only their shadows behind on Wale, and this they did when they wished to steal food from the reserves without allowing anyone to know that they had committed theft. Little is known of their stay on Pukapuka. The men did not settle down or marry Pukapukan women. They left and went back to their home islands. There is a house site in Loto known as Kualeu and another place called Pupuya (Scent—of *lenga*), and by these two names their visit is remembered today.

Contact with Nassau

In the time of Kuluea and Wue, seventh and eighth chiefs, close contact was maintained between Pukapuka and the island of Nassau, 40 miles southeast. The Pukapukans believe that they own this island and give the following accounts:

> Ngalewu was a Pukapukan man who was put in charge of Nassau by the god Mataliki. Hence the saying "Na tai o Ngalewu" applied to a fair wind and calm sea on the south and east sides of Wale, the implication being that Ngalewu controlled the wind and sea of this part of the atoll from his strategic position on Nassau. Tima was a warrior who came to Pukapuka from the land called Aitutaki. He sailed on to Nassau but Ngalewu saw him and chased him away. Tima came to the submerged reef that runs west from the atoll but Ngalewu chased him from this place also, so Tima went back to Aitutaki after giving his name to the reef, Te Toka-o-Tima. The name of Nassau at this time was Te Nuku-o-Ngalewu. Some people from Pukapuka

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real, but, after all allowance is made, the fact remains that the Pukapukans were daring voyagers, of which the following material is sufficient evidence.

The first voyage of which record still remains is that of Tu (captain) and Longo, who went with a crew in a single outrigger canoe:

> These men sailed to the east to look for fresh lands and to increase the prestige of Ngake village. They took with them as stores, fish, cooked foods, talo and nuts, perhaps also fire. Fresh stores they procured from the islands visited. The first land they came to was Walalanga. They placed an offering to their god on this island, setting up a stone around which they tied a coconut leaf. After a short stay, they went on to Wakalava, a very large, long, mountainous land. Their star course to these two lands from Pukapuka was probably the Pleiades. They sailed farther east and came to Tongaleleva, then to Lua Maunga-wiwi, where two mountains, joined together at their tops, made a tunnel through which the canoe sailed. Their next landfall was Te Tawa-o-te-langi (Side-of-the-sky), where everything was beautiful, rocks, flowers, and trees particularly so. Here they sought to gather the beautiful things they saw about them and bring them back to Pukapuka to show the people. They filled up the canoe with all manner of things and put to sea, but before going far, the flowers had all wilted. They put back to land to gather more, but the flowers wilted again. A third time they gathered flowers, but again they turned to ugliness, so they sailed on without going back, visiting lands in every possible direction.
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> On their return to Pukapuka, they divided among the people of Ngake all the basalt rocks they had acquired. These were used for adzes. A few plants found in their canoe were planted but they were too dead to take root. Tu and Longo also taught the people their knowledge of strange lands, the star courses to reach them, the names of the winds that blow on the Ngake side. By some the two stars, α and β Centauri, are thought to refer to these two men under their names of Na Mata-o-te-tokalua (Stars-of-the-pair).

The second voyage of early navigators was that of Tonu (captain) and Taea with a crew of Loto men. It is likely that this voyage represented a rival expedition, seeking to emulate or excel the voyage of the Ngake men.

> The voyage of Tonu and Taea was made in the season of easterly winds, from April to October. The voyagers visited the island called Te Motu-tuwua (identified by some as Fanning Island) and Te Papakaleva (perhaps one of the Equatorial Islands), both islands frequently mentioned in the legends as having excellent fishing grounds near by. Another island visited was Pa-lakawanga, termed Pule-tutu in a second account because the people of this island burned on funeral pyres the bodies of their dead. At the place called Te Tawa-o-te-langi (Side-of-the-sky) the navigators tried to pick the flower called *tokolangi*, which is the same plant as that unsuccessfully gathered by the expedition of Tu and Longo. The voyagers came finally to Yayake where the attractiveness of the copulating places tempted them to settle for a time. Afraid, however, of the displeasure of their god, Matalili, they hurried back to Pukapuka and told the story of their adventures.

Two voyages which informants thought were next in order nicely mix the improbable with a characteristic Pukapukan view of human nature:

> Welei was a man rejected by women. His god took pity on him and made for Welei a coconut-leaflet canoe which quickly transported him to a land called Nuku-mamole (Island-of-many-vaginas) or Nuku-mamole (Island-smelling-of-vaginas), inhabited only by women. The women paid so much attention to Welei that he soon died, exhausted by their persistent attentions. Hence the saying in Pukapuka when a man

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173 484 171 has difficulty in obtaining a woman's favor: "Wano koe ki Nuku-namutole" (Go you to Nuku-namutole). Children at play sometimes fashion little make-believe canoes of coconut leaflets which they call *voko o Welei* (canoes of Welei). The legend of a far-away island inhabited only by women recalls a similar legend reported from both Sikaiana and San Cristoval.

The voyage of Yawau indicates the intense power of the weapon of ridicule in a small community and the manner in which its unsparing use can drive a man to the most desperate straits. Yawau was a priest of Yamaunga lineage. As the result of a fishing contest, the lineage was able to present Yawau with a large portion of *Ruvettus* fish. Yawau ate heartily of this fish, but later when chanting to his god in the god house, the people noticed that he had defecated on the priest's seat. Yawau became ashamed of his mishap, especially as the children were wont to tease him about it. He fitted out a canoe and sailed away, seeking for a land where the people had not heard of his shame. But the people of Tokelau, of Samoa, of Fiji, and of many other islands welcomed him with ridicule and it was only after reaching the land called Kapiti-te-wue that Yawau was able to find a haven where he could settle down and live forever.

[626 558] 173 177 [484] The journey of Wue, eighth chief of Pukapuka, made to the islands to the east and west of Pukapuka resulted in the introduction of many games with which the Pukapukans were not previously familiar. The account is a long one, telling of the adventures of Wue, his two sons, and his crew of Loto men at each of the islands visited.

By asserting that anything new he saw was a child's trick of no consequence in Pukapuka, Wue was able to steal swings from the people of Lakawanga, jackstone shells, the idea of coconut juggling, and kicking games from other islands, *tupe* discs from Wakalava. At only one island was Wue unsuccessful. At Motulau, the people played with a red feather which, when placed in the mouth turned the whole body a deep red color; when the feather was removed, the body turned brown again. In spite of all Wue's assumed indifference, people of Motulau valued the red feather too highly to allow him to take it and Wue could bring back to Pukapuka only a memory of the tantalizing feather. The remarks of Wue, the counter-remarks of the people of the islands he visited (all repeated the customary three times) and the tricks whereby Wue secured the things that interested him, are all considered highly amusing. The saying *Te Ngutu o Wue* (the mouth of Wue) is today applied to any one who exaggerates greatly or who obtains something from another by lies, beggary, simulation, or trickery.

173 484 The next voyages were those of Te Nana and Yi to Tonga, Niue, and Yayake. Informants thought they occurred in the reign of the chief Maina. But as this was after the seismic wave had more than decimated the population, it seems unlikely that there would have been enough energy left for long voyages of adventure and exploration. It is probable that these voyages belong to the era of Wue, being made perhaps after this explorer had returned to Pukapuka from one of his trips with his accounts of lands to the east and to the west.

173 Te Nana and Yi had each an outrigger canoe. Beyond the names mentioned in the narrative, other members of the crews are not remembered today. After leaving Pukapuka, the first landfall of the canoes was Te Motu-tawua and To Papakaiva. They fished in the lagoon in the middle of Te Motu-tawua as all the other voyagers had done. They ate fish until they were satiated, which was soon, because they had no complement of taio. Then To Vae-matua, one of Te Nana's crew, thought of the plan

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is not interested in platonic love. It is extremely doubtful if it would be possible to explain to him just what such a concept involves.

For the Pukapukan all activities lead naturally to sex. Whatever the purpose of a chant, whether to glorify a fishing triumph, to grieve over a departed relative, to recite physical and individual skills, all come sooner or later to the fact of sex; and triumphs and skills are woven harmoniously into a context that stresses the greatest joys of Pukapukan life. It is just this cultural patterning that makes Pukapukan culture difficult for a European to comprehend, let alone to appreciate by an effort of feeling. It is this patterning also that makes all chants and stories difficult to translate. They belong to another world of action, feeling, and ideal, widely at variance with our own. But to appreciate this atoll culture is to enrich our knowledge of the wide gamut of characteristic configuration provided by the kaleidoscope of primitive societies.

CULTURAL AFFINITIES

A brief summary of the material presented in this report will indicate the main affinities of Pukapukan culture. It is important to stress the simplifications inevitably produced in Pukapuka by the limitations of an atoll environment. This is most noticeable in material culture (witness the absence of bark-cloth manufacture) but environmental influences also affect social organization. Absence of kava means the non-development of elaborate kava ceremonial; limitations in food resources mean that much time must be spent by both men and women in procuring food. A consequent lack of leisure has not been conducive perhaps to the development of a leisure class of chiefs who could afford the luxury of supporting skilled artisans and craftsmen.

A cursory comparison of Pukapukan material culture with that of Polynesia as a whole indicates that Pukapuka shares largely in prominent elements common to both eastern and western Polynesia. Associations of Pukapukan material culture with elements found only in the west or only in the east are relatively small. A comparison with Handy's list (15) indicates that Pukapukan culture is preponderantly early Polynesian, and shares only secondarily in elements supposed to be characteristic of Handy's *arii* culture.

However, relationships with Samoa and other western islands are relatively close. Bonito fishing and the type bonito hook resemble Samoan patterns. Samoa has many fish traps and Pukapuka few, but Pukapuka has elaborated techniques of deep-sea and surface fishing with baited hooks that are foreign to Samoa. In hunting, the use of spring traps is common to Pukapuka and the west; in fowling, Pukapuka has the bird net, but not the decoy bird. The fowling line is shared with islands farther west than Samoa. Wet-land taro cultivation without irrigation is common to both

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171 Pukapuka and Samoa. The double-pointed throwing weapon links Pukapuka to Funafuti; oval or round religious structures seem to have their nearest parallel with those of Niutao in the Ellice Islands. Unlike Samoa, Pukapuka lacks tattooing, the arched house, the use of house decorative lashings and the plank-flanged canoe, though the use of flanges on the dugout canoe may suggest Samoan influence.

In social organization, Pukapuka presents several features that seem more Melanesian than Polynesian. This is notable in the structure of the maternal moieties, and the importance of named maternal descent groups. The common western Polynesian custom of *vasu* or *fahu* is absent in Pukapuka. Though the Pukapukan kinship system is marginal to the west, there has been a specialization in the function of at least one western kinship category (the *mayakitanga*, sacred maid), and whereas brother-sister tapu is absent, the full weight of avoidance has fallen on those of opposite sex who are related as cross or parallel cousins. This strongly suggests a similar emphasis reported for the southeast and northwest Solomon Islands (Mala and Buka). Again, the elaboration of rank within kindred associated with the west, and the elaboration of rank within the social structure associated with Samoa and Tonga, together with a chiefly language, are all lacking in the simpler, more democratic structure of Pukapukan society.

The hierarchy of Pukapukan gods is hard to trace elsewhere. The named gods and their elaboration of function seem peculiar to Pukapuka. The absence of such gods as Tangaloa, Tane, Ru, and Rongo points to a break with the deistic systems of the rest of Polynesia, Certain correspondence between the Pukapukan conception of the Underworld and that formerly prevalent in Futuna may be noted, but it is significant that a common western name for the underworld, *pulotu* or its dialectical equivalent, is unknown in Pukapuka other than as a recently introduced word.

191 Linguistically, the dialect of Pukapuka and its phonetic material seem to be unique in that it is impossible to say whether Pukapukan is more closely allied to the western or to eastern dialects. One of the two phonetic anomalies that are not found elsewhere in Polynesia appears to have its closest affinity with sounds recorded for Fiji and the New Hebrides.

171 The games of Pukapuka are widespread Polynesian games. Analysis of the string figures indicates that these show a closer affinity with the west than with the east. Because comparative string figure collections are still very inadequate, it is impossible to be more definite than this.

The myths and tales of Pukapuka mention several of the well-known Polynesian culture heroes. It is possible that the relatively large number of animal tales in Pukapuka, though few by comparison with the total number of known tales, points to a far western affiliation. At least it serves to dis-

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171 tinguish Pukapuka from most other Polynesian groups. The Pukapukan origin myth is characteristically western in its phrasing.

Traditional history seems to point to fairly close contact long ago with islands to the west. It is unfortunate that so many of the foreign lands mentioned in these accounts can not be identified. The modern Pukapukan firmly believes that such names as Tonga, Yamoa, Witi, Tokelau and others refer in the legends to Polynesian islands which bear these names today. For lack of other evidence I see no reason to deny this. In the light of this traditional history it is hardly legitimate to pose the question: whence came the Pukapukans? The modern Pukapukan has no answer. The modern ethnologist can not yet speak with finality.

101 I take it as reasonably clear, however, that on a basic stratum of fundamentally Polynesian patterns, there has been superimposed a culture that has strong affiliations with both eastern and western Polynesia, but on the whole is marginal to the west. These strata, combined with certain specific elaborations or survivals in social organization, serve to give characteristic accent to Pukapukan culture when viewed against the background of Polynesia as a whole.

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native classification is not here followed.

538 801 The motif of "threes" appears in all stories whether mythical or historical. Thus Tamayei flies three times to Pukapuka from Tonga in the form of a bird before he sees the head of the stone appearing above the water. Lingutaimoa calls her lost pet manini fish three times, then she calls for a wave to take her to the horizon: the first and second waves are not good, but the third wave bears her to her destination. The use of this "three" motif together with other types of repetition serves as a technical device to heighten suspense, increase the dramatic qualities of a narrative and produce an exciting climax.

538 Infrequent occurrences of the motif of animal transformation are found in the folktales and stories of gods' contact with humans. The god Tamayei comes to Pukapuka twice as a bird, the third times as a god. The children of Punga and Punga Momoto are transformed into land animals and sea animals. Leiakunavai is transformed into a rat because her children insist on bringing her husband back to her island. The god Nagliyeyeu transforms himself into a bird in order to seduce a woman, and in another story of Ngaliyeyeu and his friend the god Te Awuawu, birds transform themselves into men in order to assist a canoe crew from Loto to steal nuts from Motu Kotawa. A final case of transformation occurs in the story of Vaetuaniu where a spirit becomes a log in order to drift to an island of children. This completes the examples of transformation, whether animal or otherwise;
[171] it is evident that the motif is not as common in Pukapukan stories as it is in other parts of Polynesia. Only a few stories are told in which all the characters are animals. That such stories are found in Pukapuka is further indication of the western Polynesian phrasing of the culture.

Myths

773 The myths of Pukapuka are few in number. They concern the lifting up of the sky; the pulling up of the land of Tonga by Maui; the testing Maui by the gods; the naming and coloring of the fishes by Maui, Yina, and a third culture hero, Walemate; other fragmentary stories of the goddess Yina; a fragment about the discovery of fire by Mauikatoto [see 1: Beaglehole and Beaglehole, p. 97, category 773, 539 or 116 --analyst.] said to be unrelated to the better known Polynesian hero Maui Potiki; and finally the story of Lata. These stories help to explain natural phenomena. They link up with the stories of the origin of Pukapuka [see 1: Beaglehole and

773 Beaglehole, pp. 375-377, category 539 or 116--analyst.] and the origin of the maternal moieties [see 1: Beaglehole and Beaglehole, pp. 222-223, category 539 or 116--analyst.] Geographical features of Pukapuka are explained in the origin story. Tumulivaka made the taro beds by stamping his angry
773 feet on the ground. A variant account explains the atoll's
103 old name, Te Ulu-o-te-Watu (Head-of-the-Stone): When the gods were building up the stone (the island), they made the navel of the land at the place called Te Yalo in the middle of the reserve of Uta. Its two legs are the reserves Ko and Kotawa. As their work was interrupted by Mataliki, the gods had no time to make the arms, eyes, or the rest of the anatomy. Hence the name, Head-of-the-Stone, because only the head (plus feet) of the stone body was completed.

Raising of the Sky

773 The first myth, the story of Lu and the raising of the sky, is said by some informants to tell of happenings in the land of Yamoa (Samoa) when all the inhabitants of that land were gods.

539 The sky was quite low down and stuck to the earth. The gods were groping about. They cried out for one to raise the sky so that they might be able to sit and stand upright. The god Vaelua crawled to the land of Tongaleleva, there to ask Lu, a tall god with a large body, originally from the distant land of Aólako, to come to Yamoa and raise the sky. Lu arrived with his two friends, Pingao and Yaloa. The two friends raised up one side of the sky and the three gods crawled underneath it as far as the center. They raised the sky a little, but the gods of Yamoa were dissatisfied. Lu turned on his side, raising the sky higher, but the gods were again dissatisfied. Lu turned over on his belly, rested both arms on the ground and pushed himself into a sitting position. The gods were satisfied for the moment as they walked about but they soon asked Lu to raise the sky higher. Lu knelt on his knees while Pingao and Yaloa spread out the sky evenly, tearing it apart from the earth in those places where it was stuck. The gods asked for the sky to be higher still. Lu stood up on his feet, then on tiptoe, and finally stretched his arms above his head, pushing the sky higher until it stuck above the earth. Thus the sky was separated from the earth and the gods of Yamoa made happy.

Maui Cycle

773 Among the gods who were relieved from distress when Lu
171 raised up the sky were the three Maui brothers. The Pukapukan

773 171 story of how Maui Potiki went fishing with his brothers and fished up the land of Tonga follows the general pattern of the widespread Polynesian narrative, in which Maui Potiki is generally held in contempt by his two elder brothers, only to succeed in the end by making the brothers look ridiculous. Nothing is known in Pukapuka of Maui's parentage. The Pukapukan narrative includes an account of the naming of certain stars, the origin of taro and pulaka, the dispersal of the gods from Tonga which resulted in the discovery of Pukapuka by Tamayei and the settlement there of many of the dispersed gods. The story was written by Talainga. For the names of the Pukapukan fishes mentioned and the fishing method used by the three brothers, see [1] Beaglehole and Beaglehole, pp. 64-65. category 116--analyst.]

539 Ko te wanongo o Maui ma:
Ko Maui Mua, ma Maui Loto ma Maui Potiki. Talatala loa i a Maui Mua ma Maui Loto, ka wo laua wangota. Tapena loa a laua penupenu. Kakole la i a Maui Potiki, "Ka wo la kolua wangota? Ka tatou mo ka wo?" Kakole la lua ona taina ia, "Ka yau wua koe ki te kakole, wakala ma te la? Koa koe iloa la e te yi ika? E yi oki la au kawa?" Kakole la i a Maui Potiki, "E kole la, ke wengatu wua au i muli o kolua, ke onoono wuake i a kolua yinga. Aumai la e kawa maku ke wakamatautau ake ai au e te yi ika." Kakole i a Maui Mua ma Maui Loto. "I a ngakaumate, e wai kawa i ana! te kawa ka wakalavea. Ke lavea io mo makai loa koe i te moana." Totoko loa i a Maui Potiki, "E kole lava, ko tatou lava ka wo. Tapena kolua e

The story of Maui and the others:
There were Maui Mua (the first), Maui Loto (the middle), and Maui Potiki (the baby). Maui Mua and Maui Loto talked, they were going fishing. They prepared their gear. Maui Potiki protested, "Are you two going fishing? We are all going, aren't we?" His two brothers objected, "Are you going to come just for nothing, merely to expose yourself to the sun? Do you know how to fish? Besides, have you any line?" Maui Potiki insisted, "No, just let me go (along) behind you two that I may watch your fishing. Bring a line for me that I may practic e at fishing." Maui Mua and Maui Loto were scornful, "The cheeky fellow, he take a line! The line will get caught on a rock. If it caught on a rock, you'd throw it into the sea, wouldn't you?" Maui Potiki was stubborn, "No indeed, the three of us shall go. You two prepare a line for me, and a hook." His two brothers

539 My trick was first to become dark,
Then to become light.
That is why the tropic bird
Lost forever its long tail.

Lord of the Sea

[538] The story of the ray and the swordfish relates the fight between the fish to determine which should be the ruler of the sea. In telling this story, the narrator inserted ejaculations "pu! .pu!" at appropriate points to indicate the sounds of a fierce struggle. Uttered in a piping tone of voice they represent a conventional method of indicating to listeners that a struggle is taking place between named contestants.

There was a dispute among the fish as to which were the strong and which were the weak. All the big fish of the sea divided themselves into pairs; the swordfish and the ray, the eel and the whale, the shark and the kingfish and so on. First the eel fought the whale. The eel was vanquished; its mouth was distorted by a blow of the whale's tale, and the whale's tail was splayed by a bite from the eel. Then the shark and the kingfish fought. When the shark rushed forward the kingfish jumped high into the air. Turning its head down and throwing its tail up it dived towards the shark swimming below. It bit a piece out of the shark's tail, an indentation that shows to this day. The shark was soon exhausted by the struggle and the kingfish exulted in its victory.

The ray and the swordfish quarreled next. The ray threw his two tails at the swordfish and made the swordfish angry with pain. Then as he rushed to spear the ray with his sword, the ray broke off the sword. The ray then retreated and hid himself under a rock. The swordfish sharpened his broken sword and sought everywhere for his opponent. He asked many fish of the sea where the ray was hiding but none could tell him. At last the papatateki fish showed the hiding place. As the ray slept peacefully under his rock the swordfish threw forward his head and rushed at the ray. His sword pierced the ray and tore him to pieces. The ray died and the swordfish cried, "Let all the fish hear! Those who would be stubborn and dispute my will, let them look at the fat of the ray!"

Octopus and Rat

[71] [538] The legend of the canoe of all the animals is the Pukapukan version of the popular Polynesian story of the ingratitude of the rat to the octopus.

The various crabs, the many birds and the rat went fishing

539 one day in a canoe. After they had cast anchor a squall came up and sank their canoe. The birds flew to land, the crabs crawled back to land along the sea bottom. The rat alone drifted on the surface of the sea, swimming and calling for help. He cried to the passing whale to take him to the land of Tinilau, but the whale refused and pushed him under water. The rat floated again to the surface and called to the turtle to take him to the land of Tinilau, but the turtle likewise refused and pushed him under water. The swordfish did likewise.

At last the rat called to the octopus. The octopus had pity for the sad plight of the rat and allowed the rat to jump on his back. Then he swam with him to the land of Tinilau. As they reached the shore the rat defecated on the head of the octopus and then ran inland very far off. He called to the octopus to feel his head. The octopus then found that his head was covered with feces. He gave chase to the rat but the rat ran inside a Pandanus log and was safe.

The following popular verse from a chant is supposed to call to mind this story:

Oh rat, crying "Ngi! ngi! "
You crawl on the roof,
You jump down to the end rafters.
We listen and say, "That is the rat! "
You are killed by the people
And your gravestone is set up.

Folk Tales

538 Of the folk tales here grouped together, some are versions
171 of widely spread Polynesian tales, others seem to be limited to Pukapuka. Two of the stories are concerned with the relations between humans and fish. Two have slight moralistic undertone; the tale of Tatamanu tells what happened to a man who is stingy and does not share food with his people; the tale of Laumeakula and his wife apparently has as its motive for the drowning of the parents, their sorrow at the ungenerous conduct of nine of their children toward the tenth child. Of the two remaining tales, one is a simple folk tale, the scene of which is elsewhere than Pukapuka, the other relates to a story about the giants of the legendary land of Tongaleleva.

Kaliwi and the winds

539 The tale of Kaliwi and the komuli fish is given first. No reason could be advanced by informants as to how the woman Kaliwi came to be high up in a coconut tree, unless she had climbed to gather nuts and then became so nervous she did

538 oven). Here there is another association with the cooking
266 and eating of food, as if the ultimate revenge can only be
578 gained through the eating of the hated person. Insofar as
154 there are no records in Pukapuka of actual cannibalism, this expression for revenge, together with the other eating concepts above, presumably have reference to a deep seated vicarious satisfaction obtained from the use of these idioms and concepts.

Of Wawine-mata

539 Wawine-mata was a man-eating woman. Her child was a small infant. One day she wished to go looking for food so she searched among the houses for a woman to care for her child while she was away. She found a woman named Tulekaleka (10) who agreed to watch over the infant while the mother was away. Wawine-mata gave explicit instructions about the child: if it cried, Tulekaleka was to give it water; if it hungered, Tulekaleka was to feed it coconut flesh.

After Wawine-mata had left, the infant began to cry in hunger. Tulekaleka fed it coconut flesh. Then she tore off the child's arm and ripped out its liver. The infant died. Tulekaleka washed off the blood from the corpse and wrapped it up nicely in a mat. She baked the infant's liver in the oven.

Wawine-mata returned to find Tulekaleka sitting quietly beside the bundled up infant. She thought the child was asleep and wished to wake it but Tulekaleka persuaded her to let it lie until she had tasted a portion of delicious food that she produced from the oven. Wawine-mata tasted, then praised the food, asking for more. She became thirsty and Tulekaleka took the coconut containers to fill them at the well. Instead of filling them, however, she smashed them one by one against a stone. Wawine-mata saw this. Suddenly she turned to her bundled infant. She opened the mat to find inside the dead

[171] 10. The sex of the individual Tulekaleka is of comparative importance because of the fact that Kennedy [see bibliographical reference] in 1: Beaglehole and Beaglehole, p. 416, category 113 or 116--analyst.] reports from Vaitupu a story very similar to this in which Tulekaleka was a boy. In recording this story we assumed that the Pukapukan Tulekaleka was female. Informants agreed by letter that this was correct, all save two very reliable elderly men, who were positive that the Pukapukan character was an adult man.

Introduction

121 · The following string figures were collected at odd moments
126 during the course of formal ethnological study of Pukapukan culture in 1934-1935. Information about this Polynesian atoll, its culture and the nature of the joint research of Ernest Beaglehole and myself is given elsewhere (1). I am indebted

1. See 2, Literature Cited, page 27.

to Kenneth P. Emory, Bernice P. Bishop Museum, for assistance in making the photographs from which the line drawings have been made. Ernest Beaglehole has helped me prepare this manuscript for publication.

Figures

524 String figures (waiwai) are made by Pukapukans with lengths
517 of pandanus material (lito). Both children and adults enjoy making the figures whenever the spirit moves them. "Crazes" are common. For days at a time everyone has a piece of pandanus in his hand and makes the figures whenever he has a moment to spare. Experts good naturedly teach novices, and children too young to apprehend nevertheless proudly contrive with weirdly tangled strings to emulate their elders. Then the craze dies down and no one bothers with the figures until a later chance spark recreates popular interest. The figures are made for amusement only. They have no religious or magical import.

Though most can make the majority of figures collected, only a few know them all. All the people however are familiar with the names of every old figure and are quick to label as a mere thing (mea wua) of no account, modern inventions.

The following collection includes, with one doubtful exception, only authentically old Pukapukan figures.

Comparative note

524 The accompanying table shows the distibution of 17 string
● 171 figures and 1 trick figure of the Pukapukan series which correspond to figures reported from other Oceanic areas. (2)

2. An asterisk over the name of a figure in the table indicates that the figure is not identical in all movements with the corresponding Pukapukan figure. In most cases one figure continues where the other leaves off. In all cases the figures are sufficiently alike over a series of movements for the correspondence to be noteworthy.

524 The comparative material is much too unequal for final results
171 to be adduced and must inevitably remain so until an exhaustive number of figures is collected from each island group in Occeania. Certain tentative conclusions however may be mentioned. Taking Polynesia proper and dividing it into four sub-areas (north, Hawaii; south, New Zealand; central and east, Aitutaki, Australs, Marquesas, Society, and Tuamotus; and west, Tokelau, Tonga, Samoa, Uvea, and also Fiji), the percentage of correspondence between Pukapukan figures and the total number of available figures for each area mentioned is shown in the following:

	Figures reported	Pukapuka	Percentage
West	54	17	31
South	36	7	20
Central-East	218	31	14
North	115	4	3

From this it is evident that prevailing correspondences between Pukapuka and the rest of Polynesia rather heavily favor the West. The percentage of 31 for the West may be compared with a total correspondence of 37 percent for Polynesia, excluding the West. If western and southern affiliations with Pukapuka are grouped, the percentage correspondence is 51 against a correspondence of 17 percent with North, Central, and East.

Of the 8 Pukapukan figures which correspond with figures from Fiji, 6 are widely distributed throughout the rest of Polynesia. Only 2 are reported for Pukapuka and Fiji alone. Of the 9 Pukapukan figures also found in the Tuamotus, 7 are found elsewhere in Polynesia, leaving but 2 which are reported for the Tuamotus and Pukapuka alone. Only 1 of the 7 Pukapukan figures found also in New Zealand is not reported elsewhere. This analysis indicates that unique Pukapukan figures occur equally in part of the West, part of the East, and to a degree, in the South.

The Pukapukan series of 6 figures which are grouped under the type figure, Te-imu-o-Wale-Puapua, is strikingly absent in figures reported elsewhere. The Marquesan figure, Te-nohona-o-te-kua (Handy, 9, p. 32), shows vague resemblances to one of the series (Lua-tangata). The Maori figure, Kopu 2 (Andersen, 1, p. 65) bears some resemblance again to another of this series, Te-imu-o-Tima, but the Maori and Pukapukan figures are by no means identical.

DISTRIBUTION OF PUKAPUKAN STRING FIGURES

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Pukapuka	Tuamotus	Austral	Fiji	New Zealand
1. Tava	Kokikokiko (3 Diamonds)	Iisuri (Rurutu)	Suviàulo Kapa	Parori Over and over
2. Na wiwi (Lau kapa series)	Mangorongoo	Raupaka tatai (Rapa) Rurutu Tubuai Tup. Rim.	Imbi	Takapau
3. Tikanikani	Moko (Meth. 2)	Ca uru (Rapa)	Tambua*	Mauli*
4. Wala yila wua		Matariki (Rapa)	Lalakai	Ikiki
5. Kumete		Ca kamia (Rapa) Mato (Rim.) Ame iios(Rurutu)	Velovélo	
6. Te kolemu yengiyengi	Ki fàru	(la-ia) (Rapa)		Toomi
7. Wàia ola		Tuara (Rapa)	Mataki katiai	
8. Te tai kiki		(Rapa) (Rurutu) (Rim., Tup.)		
9. Te itu wala kula	Kahengahenga* Na faro turu	Te Are Matui (Rurutu) (Rim.) (Tup.)		
10. Te kivi a ia kakai	Puhànga toto			
11. Te itu wuuli kilanga	Te vaka Tiranga			Te waka a Tama Rererofi
12. La palepale				
13. Kupanga			Kupanga* Lawa	
14. Paiokiola (t (a) Kitikiti palo (b) Toca kula	(a) Komo rikiriki (b) Na taringa moko			
15. Te matangi yaaloka (Meth. 1)	Te raki o Hiro*			
16. Te ima o Te Lautala				Koura
17. Te pa o Muniumàvaka			Rara ni Kulá	
Hand slip trick				
Authority	Emory (7)	Stokes (13)	Hornell (10)	Anderson (1)

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DISTRIBUTION OF PUKAPUKAN STRING FIGURES

Society	Marquesas	Hawaii	Tonga	Uvea
Iolo	Tohiau		Matamata kupenga Moenga	Mata kupenga iliiki
Firi rau anani	Kou kape		Lou kape*	
Mo'o		Moo-iki B (Meth. 1)	Pilitaleiku*	
	Tapa'au (na fitu*			
Apoo mai ahana Apoo iio		Wa'a		
	Popo iikaue	Okole amo (Meth. 3)		
Ruruiu	Tuhii koa*			
				Tai loloto
Te tumu o te papa* Te fare no Oro*				
		Four Eyes A (Meth. 2)		
Fifi rau ape				Mata kupenga laiahi
		E loli o		
Handy (9)	Handy (9)	Dickey (6)	Hornell (10)	Burrows (3)

DISTRIBUTION OF PUKAPUKAN STRING FIGURES

New Caledonia Loyalty Island	D'Entrecasteaux	Samoa	Aitutaki	Caroline Is.
Nameless X	Giwala			
		Pilipo - mo'imo'i	Moku	
The sugar cane				Ten-mon - Betel leaf
	Fo'se			
Sardines				
		Laulau		
Compton (15)	Jonnese (11)	Buck (15)	Buck (14)	Compton (5)

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DISTRIBUTION OF PUKAPUKAN STRING FIGURES

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Gilbert	New Hebrides	Tokelau	Nauru	
Tapa		Tafa		
	Kilikia leaves			
				Flying fishes
Hornell (10)	Dicky (4)	Hornell (4)	Hambruch (8)	

524 A very individual Hawaiian ending for some figures which
171 is made by navahoing the thumbs, inserting the indices into the thumb triangles, and turning the fingers away under the figure and up which Dickey (6, p. 9) found elsewhere only in one figure reported from Africa, Ireland, and for one Osage Indian is employed in the Pukapukan figures, Te-kivi-a-te-kakai and Te-kivi-a-Yilewu in a manner which corresponds exactly to the Hawiian method. Emory (7) reports Te-kivi-a-te-kakai for the Tuamotus. The same ending is used in a related manner for the Pukapukan liu wuwuli figures.

Grouping of figures

Twenty-eight of the Pukapukan figures may be grouped into 9 series, each employing a characteristic opening or closing which is unique to the series. These groups are:

1. Te-imu-o-Wale-Puapua
   Te-imu-o-Tima
   Lua-tangata-wetu-i-te-akau
   Te-ikapaetai
   Te-langi-loa
   Te-papanga-o-te-waulua
2. Taku-laukape
   Na-wiwi
   Te-Va-o-Manuyiki-ma-Lakawanga
   Te-pitopito-i-Kolo
   Te-kapu-ta-ika
   Kau-a-pulaka
3. Te-ponaunau
   Te-katatuna
   Te-pu-o-Mumumaveka
4. Te-matangi-tavili
   Te-matangi-yauleka
   Te-matangi-tavili
5. Wala-ola
   Wala-yila-wua
6. Te-liu-wuwuli-ki-lalo
   Te-liu-wuwuli-ki-lunga
7. Paiokiole
   Tikonikoni
8. Te-tau-lunga
   Te-tau-lalo
9. Te-kivi-a-te-kakai
   Te-kivi-a-Yilewu

The remainder of the figures do not fall into any groups.

Most of the Pukapukan figures open in the usual Polynesian manner, position 1, opening A. Besides this orthodox opening, 11 other openings are used in 13 figures. The figures that have unorthodox openings are:

1. Te-tavatav-o-te-wui-kiole
2. Te-Pu-o-Loto
3. Te-matangi-tavili
   Te-matangi-yauleka
4. Te-matangi-taulele
   Te-tai-kiki
5. Te-itu-wala-kula
6. Te-liu-wuwuli-ki-lalo
7. Te-liu-wuwuli-ki-lunga
8. Te-kolemu-yengiyengi
9. Te-wua-ya-valu
10. Kupenga
11. Te-kau-a-pulaka

10: Beaglehole E-5 (1934-5)1937 Pukapukans

interference with his plans. When it was lowered and he had returned to normal, there was no thought of continuing the torture of the woman he loved.

I have given the facts and have suggested that there is some necessity for explaining how the friendly, kind, sympathetic and generous Pukapukan comes to act in a way that is the reverse of all these qualities. It would seem that the function of such violent behavior, whether institutionalized, socially approved for the moment by a social group making new laws to fit the immediate situation, or individually patterned by a personality strong enough to defy opposition, is to provide an outlet for repressed aggression and anxiety that can find little satisfaction in the ordinary give and take of social life among a closely integrated group, extraverted in its culture patterns but forced to live a cooped life on a tiny coral atoll. Such tendencies being for the moment satisfied, the group can lapse back into more normal patterns of behavior and take up again, without undue strain, the petty annoyances and pleasures of everyday living.

The facts so far given refer to a Polynesian atoll, but behavior patterns similar to those described were not unknown among another Polynesian people, the Maori of New Zealand. The Maori tribe, the unit in which and for which the individual existed, was as circumscribed and isolated in its territory as any island group. Tribal ethics placed great value on group loyalty, solidarity, and cohesion. Yet because of individual aggressive tendencies the typical Maori tribe was a hotbed of petty jealousies, strifes and violent competitions between family groups over points of status and punctilios of honor. The major catharsis for an intolerable conflict between ideals of group loyalty and individual desires was inter-tribal warfare. A shamed or humiliated individual might sometimes provoke such warfare by deliberately and secretly going to the territory of another tribe and there just as deliberately killing all whom he could. Responsibility for the outrage would be assigned collectively to the tribe of the killer, and before the latter realized what was in the wind the avengers would sweep down, clamoring for blood and killing indiscriminately men, women and children. Thus outraged pride or dignity resulted in a type of aggressive behavior that could be satisfied only by the destruction of the members of one's own group.

In conclusion I would add that the material here given suggests further implications for social psychology. The observer who takes account of the relation of the individual to the group in those closely integrated units of the pre-literate peoples, is